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R E P O R T S
FROM
C O M M I S S I O N E R S :
THIRTEEN VOLUMES.

— (12.) —

RAILWAYS;
SMITHFIELD MARKET.

Session

31 January — 15 August 1850.

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1850.

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N.B.—*THE* Figures at the beginning of the line, correspond with the N° at the foot of each Report; and the Figures at the end of the line, refer to the MS. Paging of the Volumes arranged for The House of Commons.

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REPORT
OF
THE COMMISSIONERS
OF
RAILWAYS
FOR THE YEAR
1849.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:
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FOR HER MAJESTY'S STATIONERY OFFICE.

1850.

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R E P O R T.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

WE, Your Majesty's Commissioners of Railways, humbly beg to lay before Your Majesty a Report of our proceedings in the year 1849.

In this year a very large increase has been made in the railway communication of this country, but not to the same extent as in the preceding year 1848, although larger than in any other previous year. At the commencement of the year, 5,127 miles of railway were open for public traffic, including some miles of mineral railway not noticed in our previous Reports. During the year, the opening of 869 miles has been sanctioned by the Commissioners, of which 630 miles are in England, 108 miles in Scotland, and 131 miles are in Ireland, making the whole extent of railway communication at the end of the year, 5,996 miles; the proportion for England being 4,656 miles, for Scotland 846 miles, and for Ireland 494 miles, respectively.

By a comparison with previous years, it appears that the average length of new line included in each inspection is very much less than in any preceding year; in 1848 the average length was 13·5 miles; in 1849 it was reduced to 9·8 miles. The number of first inspections of new lines, therefore, although extending over a less mileage of railway, is not diminished, having amounted in 1849 to 88, as compared with 87 in 1848, the mileage inspected during the respective periods being 869 and 1,182; but a marked difference has occurred in the number of postponements of opening beyond the time proposed by the different Railway Companies. In the year 1848 the opening was postponed in only 11 instances, whereas in 1849 it was found necessary in 42 instances, which, with other causes, have required that altogether 166 inspections of railways should be made. The decrease in the average length of line included in each inspection, may be attributed to the gradual opening of small branches and short lines as links to complete important communications, and partly to the pecuniary embarrassments in which many railway Companies have been placed. The difficulty in procuring funds, and the desire to increase receipts and to show an increased mileage of railway open for the purposes of public traffic has evinced itself, by many lines having been reported to the Commissioners by different railway Companies as ready for opening and for the conveyance of public traffic, which upon inspection by officers of this department have not been found in such a state that they could report that their opening would not be attended with danger to the public using the same. The Reports of the Inspecting Officers having reference to these particular cases, with such others as appear to contain any matter of general interest, are given in the Appendix.

By the opening of the East Lancashire Railway from Liverpool to Preston, and from Burnley to Colne, and by the completion of the Manchester and Huddersfield Railway by the London and North-Western Railway Company, from Staley Bridge to Huddersfield, two entire lines are completed from Liverpool to Leeds, competing with the Lancashire and Yorkshire Railway, which in conjunction with the London and North Western and Midland Railways had heretofore conducted the whole of the traffic between those places. The routes are as follows:—

On the East Lancashire, by Ormskirk, Blackburn, and Accrington, to Colne, and thence on the Midland line by Skipton to Leeds—89½ miles dependent therefore upon the system adopted by these two Companies for the accommodation of the traffic.

On the Lancashire and Yorkshire lines, by Wigan, Bolton, and Bury, to Dewsbury, and thence by the London and North Western line to Leeds—81

B

miles; or proceeding from Dewsbury to Normanton, and thence by the Midland—91½ miles—to Leeds, in each case depending upon the united action of two Companies.

On the London and North Western lines by Manchester and Huddersfield to Leeds, 81½ miles, entirely under one management, with the exception of the Staleybridge Branch, 8 miles in length, and another portion 3 miles in length of the Lancashire and Yorkshire Railway, over which the London and North Western have powers to run.

The route used formerly to be by the London and North Western to Manchester, thence by the Lancashire and Yorkshire to Normanton, and on by the Midland to Leeds, 93½ miles.

By the opening of the Leeds and Thirsk Railway from the former town to Wetherby, a competing line is completed for the traffic from Thirsk, the Newcastle coalfield, and the North of England to Leeds and the manufacturing district round Manchester, shortening the distance very considerably. The old route by railway from Thirsk to Leeds was 57½ miles, to Manchester 97½ miles, which journeys can now be accomplished by travelling 39 miles and 82 miles respectively.

The Manchester, Sheffield, and Lincolnshire Railway Company have, in the present year, opened their line for public traffic from Sheffield by Worksop and Gainsborough to Glandford Brigg and Lincoln; thus conferring the advantages of railway communication upon a large part of Lincolnshire heretofore devoid of it, and completing as an integral communication in their own hands, another route distinct from those heretofore existing from Manchester and Sheffield, and the important districts surrounding those places to the east coast of England and the Humber at the ports of Great Grimsby and New Holland, opposite to Hull.

By the opening of the North Staffordshire Railway from Macclesfield to Uttoxeter, and of the Midland Railway from Burton to the Leicester and Swannington Railway, a more direct line is afforded from Manchester and the manufacturing districts, bordering the North Staffordshire Railway, to Derby and the counties of Nottingham and Norfolk, &c.

By the opening of the Shrewsbury and Birmingham and Shropshire Union Railways from Shrewsbury to Stafford and Wolverhampton, railway communication is afforded through a very populous and important mineral and manufacturing district which before was not readily accessible by railway. The Shrewsbury and Birmingham line is however at present isolated from the railways east and south of it, and therefore does not as yet give rise to any great railway competition by it and the Shrewsbury and Chester Railway with the London and North Western Railway for the traffic to Chester and Liverpool, except from the town of Wolverhampton and its immediate neighbourhood.

The Eastern Union Company, having opened their railway to Norwich, afford to the public an additional line of communication to that town, competing with the Eastern Counties, but dependent on the latter Company for the forwarding of the traffic between Colchester and London.

The opening of the Reading, Guildford, and Reigate Railway from Reigate to connect with the South Western line near Farnborough, and thence on to Reading, affords a more direct communication between the east and west of England; and the opening of the North Kent line by the same Company to Gravesend connects the important arsenals and dockyards of Chatham and Woolwich with each other and the metropolis.

No very important lines have been opened in 1849 in Scotland, those inspected having been principally extensions or branches of existing railways of minor importance. In Ireland, however, the lines opened appear to the Commissioners of a highly important nature, not only as conferring great benefits on poor localities, but as affording important lines of communication in a national point of view. The extension of the Great Southern and Western Railway has brought the important city and harbour of Cork within a seven hours' journey from Dublin, being the time at present occupied by the mail trains in traversing 164 miles, the distance by railway between these two cities, and has also served to connect the large and important harbours of Cork and Limerick. Dublin is at present a twelve hours' journey from London, so that Cork may be considered as accessible within 20 hours from London. The

opening of the Dublin and Belfast Junction Railway from Drogheda to Dundalk, and of the Dundalk and Enniskillen Railway from Dundalk to Castleblaney, has reduced the journey very materially from the north of Ireland to Dublin. It is to be regretted, however, that the Boyne river still intercepts this railway communication: the bridge, being a very large and expensive work, has not yet been commenced.

The above are the principal railways opened in the year 1849, from the position of several of which, as links connecting other railways, and thus completing fresh lines of communication between different parts of the country, a great competition arises between some of the principal companies. In some cases it will be seen that they afford outlets to places of shipment for the produce of inland districts, in others they shorten the distance to be traversed between important parts of the country, and in all cases it may be considered that they benefit the immediate localities through which they pass; but the general effect of this multiplication of lines upon the railway interests, and the extent of benefit conferred upon the public, have yet to be determined by experience.

Where the competition between important points is not created by integral lines in the hands of only *one* Company, the benefit derived by the public will depend upon the facilities of interchange, or for forwarding the traffic at the points of junction with other lines. This will to a certain extent apply where the railway of one Company joins that of a friendly Company; but where the forwarding of the traffic depends upon the facilities to be afforded by a Company which may be a rival either for the same, or at some other point for other traffic, it may readily be perceived that there will be a strong inducement on the part of one Railway Company to impede the traffic of the other, and thus, that the public will not derive the full benefit of the two lines of communication, and the shortest, and in all other respects the most advantageous route, may, in some instances, be effectually closed against all through traffic from another line.

In some cases, although the shorter route would, under an united management, be most advantageous to the public, the more circuitous one, even though not in the hands of a single Company, may be productive of the greatest returns to that Company which, having brought the traffic to the junction, would, by sending it the longer journey, receive rates upon its own railway for a greater mileage distance. This can be effected in a very great degree by obstructions at the junction in the interchange of traffic, or by charging preferential tolls, and thus the object of Parliament in authorizing the construction of the shorter line, on the ground of the advantages to be derived in the conveyance of particular classes of goods to special markets by a shorter and more economical route, and affording a larger outlet for their consumption at more moderate rates, would be defeated.

Competition by Railways has also this peculiarity, that they only compete for traffic at particular points, and not throughout their whole length, as, although the termini may be the same, they pass through and serve different districts in their intermediate course, and therefore the reduced tariff of fares and tolls caused by competition would, under the present condition of the law, which provides for equal rates for passengers and goods carried over the *same* portions of railway, and under the same circumstances only, apply to the points at and between which that competition arises, and not affect the rates and tolls at intermediate stations. The tendency, therefore, notwithstanding this multiplication of railways is, to maintain the charges for carriage to or from all stations at which there is no competition at that rate which will render to the railways the greatest receipts, irrespective of the distance over which the traffic is conveyed, but depending entirely on what the traffic can afford, and on the maximum rates fixed by Parliament.

This difference in the cost of conveyance may have a very serious local effect, giving advantages dependent on the will of the companies to one town, port, or district over another, varying the relative value of property, disarranging commercial or manufacturing interests, and causing fluctuations in a great measure irrespective of geographical position or otherwise existing local advantages, which may not preponderate to such an extent as to neutralize any difference in respect of charges made by the railway companies.

The effects and results upon the traffic of the country of this multiplication

of railways can only, however, as yet be subject of conjecture, for it will be seen, that the greater part of the competing lines have come into active operation during the past year, and that they form but a small proportion of the cases which will arise; several other important lines are now in course of construction and rapidly approaching completion, which, as they become opened, will greatly increase the number of cases of railway competition. The effect to be produced on Railway Companies themselves cannot, moreover, as yet be rightly judged of; nor the course they will adopt to secure their interests; nor in what manner their proceedings will affect the interests of the public. In a few cases, difficulties thrown in the way of an interchange of traffic may operate to exclude the public from advantages they might reasonably expect to receive; but probably an understanding will generally be come to by which the Companies will divide the traffic in that manner which they may consider most advantageous to themselves, irrespective of the interests of the public using their railways; but the intricacies of the question arising from these causes are great and various, and have not as yet fully developed themselves, and afforded information to such an extent as to enable any just conclusions to be arrived at as to the inconveniences which may arise, and the measures, if any, to be adopted to secure the public interests.

By the following Table it appears that at the end of 1849 there were about 6,030 miles of railway which had been authorized by Parliament, and still remained to be completed; that the principal part of the lines opened during the year were among those authorized in 1845 and 1846, and that the proportion of lines sanctioned in those years, the powers for constructing which have not been abandoned, is very great, being one-third and three-fourths respectively, and a still larger proportion for the year 1847.

TABLE showing, for the Railways Authorized previously to the end of 1843, and in each succeeding year, the proportion opened for Traffic during each Year, and the proportion remaining to be completed at the end of 1849; and also showing the length of Railway opened for Traffic in each Year since 1843.

	Pre- viously to Dec. 31 1843.	Length of Line opened*						Total Length of Line opened to December 31, 1849.	Length of Line authorized at end of 1843, and during each subsequent year.	Decrease by Abandonment, Deviation, &c., under Au- thority of subsequent Acts.	Length of Line after Reductions made in consequence of Aban- donment, Deviation, &c., under the Authority of Acts passed subsequent to 1843.	Length of Line remaining to be opened.
		During 1844.	During 1845.	During 1846.	During 1847.	During 1848.	During 1849.					
Of Lines authorized previously to Dec. 1843.	2,036	204	131	16	2	1	..	2,390	2,390	..	2,390	..
1844	..	..	159	366	142	118	3	788	805	..	805	17
1845	..	..	6	224	573	604	311	1,718	2,700	25	2,675	957
1846	..	..	..	..	84	403	501	958	4,538	103	4,435	3,447
1847	..	..	..	..	2	56	45	103	1,354	20	1,334	1,231
1848	..	..	..	..	..	..	7	7	371	..	371	364
1849	..	..	..	..	..	..	2	2	16	..	16	14
	2,036	204	296	606	803	1,182	869	5,996	12,174	148	12,026	6,030

* These lengths include a few miles of mineral railways, or branches for the conveyance of goods, which were not included in the corresponding table of last year, and of which no inspection is required previous to opening.

From a Return prepared in the Office of the Commissioners, which has been presented to Parliament, it appears that on the 30th June last, 1,504 miles of railway were in course of construction, and 5,132 miles of authorized line had not been commenced, since which time up to the end of the year, 576 miles have been opened for public traffic. It also appears that the number of miles in course of construction on 1st May 1848 was 2,958, as compared with 1,504 returned on the 30th June 1849 as being in progress, and since in the same period only about 1,100 miles were completed and opened for public traffic, it follows that, according to these Returns, all work has ceased on about 350 miles of lines which were returned as being in progress in 1848, and which for the present may be considered as abandoned or postponed until more prosperous times.

It is, therefore, to be inferred that no great length of new line has been commenced since last year, and that probably only about 1,000 miles out of the 6,030 miles which still remained to be opened at the end of 1849 were in progress of construction at that time.

The following Table, compiled from Returns which have been prepared for Parliament, shows at the respective periods at which the Returns were made, May 1st, 1848, and June 30th, 1849, a comparison of the number of persons employed upon railways opened for public traffic, and also upon those in course of construction in the United Kingdom, from which it appears that the average number per mile of railway in operation has been reduced from 12·3 to 10·2, or 17 per cent., which may partly be accounted for by it not being necessary to extend the numbers employed in the general management in the same ratio as the mileage of open line increases, and also to the reductions consequent upon increased economy and greater efficiency in mechanical details. The reduction in the number of persons employed in the construction of lines has been very considerable, amounting to 84,361 persons, against an increase of only 3,280 employed upon lines open for traffic, showing that 81,081 persons who in May, 1848, were actively employed in some capacity upon railways had been removed from this employment, and thrown upon the general labour market of the country. Of this number about 18,000 have been thrown out of employment in Ireland.

This, added to the reduction in the previous year, gives a total of nearly 150,000 who have been thrown out of employment, and which will in the course of the current year, unless some great change takes place in railway affairs, be augmented, probably, to the extent of 60,000 more, making an aggregate of upwards of 200,000 persons, who may be considered as having been temporarily withdrawn from other occupations by the stimulus which railways received in 1845 and 1846, and who now must seek a livelihood in other ways.

—	Railways open.				Railways not open.		
	Length of Line.	Number of Persons Employed.	Average of Persons Employed per Mile.	Stations.	Line in Course of Construction.	Number of Persons Employed.	Average of Persons Employed per Mile.
	Miles.				Miles.		
1848, May 1st. .	4,252	52,658	12·3	1,321	2,958	188,177	63·6
1849, June 30th .	5,447	55,968	10·2	1,850	1,504	103,816	69·
Increase . .	1,195	3,280	..	529	..	..	5·4
Decrease . .	..	..	2·1	..	1,454	84,361	..

A comparison of results derived from statistical information, obtained from Railway Companies by the Commissioners of Railways, and which have at various times been presented to Parliament, tends in some measure to explain the depreciation to which railway property is now subject. The increase in the length of line open for public traffic during each of the years 1847, 1848, and 1849, has been at the rate of 30·30, 24·28, and 21·63 per cent. respectively; whilst the average receipts per mile, from all descriptions of traffic, has decreased during the same years in the ratio of about 9·22, 6·96, and 13·27 per cent. respectively, and this whilst the gross receipts upon all the railways has steadily increased in the ratio of 12·49, 16·71, and 12·75 per cent., for the same periods, ending in June in each of the years 1847, 1848, and 1849, respectively. These results cannot be compared directly with any statement of capital sums expended in the construction of railways open for traffic, and which are therefore receiving or entitled to receive, interest from the net available profits accruing from the traffic on the railways. It would however appear, generally, that lines or branches have been made, the traffic upon which has either not been developed or has not come up to the anticipation of the projectors, or that railways have increased in a more rapid degree than that at which the resources of the country can supply traffic sufficient to yield the remunerative returns anticipated from the expectations raised at former periods, when only trunk-lines had been constructed, over which a very large proportion of the present traffic is carried. Probably all these causes have been in operation, to a certain extent, with others, to produce the existing depreciation of railway property.

It may, however, not be uninteresting to consider the nature of this description of property a little more in detail. The following table, compiled from

Returns prepared in the office of the Commissioners, shows the amount raised by Railway Companies in this country at the end of 1848.

It will be seen that the increased amount raised by shares and loans during that year amounted to 33,234,817*l.*, and that the aggregate expenditure was 200,173,058*l.*, of which 43,664,480*l.* was raised by loans bearing an average rate of interest of 4½ per cent., and being, therefore, an annual charge upon the permanently invested property of 2,020,334*l.*

TABLE compiled from Statistical Returns to Parliament, showing the Amounts raised by Railway Companies in the Years 1848-49, with the Gross Receipts for the same periods.

	Amounts raised by Railway Companies.				
	By Shares.	By Loans.			Total.
		Amount.	Interest.	Average Rate per Cent.	
End of 1847	126,149,476	40,788,765	..	..	166,938,241
„ 1848	156,508,578	43,664,480	2,020,334	4½	200,173,058
Increase for 1848	30,359,102	2,875,715	..	..	33,234,817
Raised by 59 Companies, who had not commenced their works	2,419,098	273,201			2,692,299

Although the Commissioners cannot at present ascertain with accuracy the increased amount raised in 1849, they believe that the total, by shares and loans, will be found to be considerably less than in 1848, and probably not far exceeding 20,000,000*l.*; and that, therefore, the total amount expended upon railways at the end of 1849, did not exceed 220,000,000*l.*

If the Commissioners are correct in considering, as before stated, that about 1,000 miles of railway were in course of construction at the end of 1849, by assuming that each such mile has had 20,000*l.* expended upon it, which it is believed is rather in excess of the correct sum, if it could be ascertained; and if the amount be still further reduced by the sum of 2,692,299*l.*, which has been raised by fifty-nine Railway Companies upon whose lines the works had not at that period been commenced, it would appear that at the end of 1849, the 5,996 miles in operation represented a capital of about 197,500,000*l.*, showing for works, stations, plant, &c., an expenditure of about 33,000*l.* per mile in the construction of the line and the provision of the necessary plant and material for working.

The gross receipts from all the railways in 1849 amounted to 11,806,000*l.*, from which, if the working expenses be deducted at the rate of 43 per cent., being about an average taken from the published statements of a number of the principal Companies, there remains a net available profit of about 6,729,420*l.* to remunerate the holders of property to the amount of 197,500,000*l.*, or at the rate of 3·40 per cent.; and it therefore appears that all sums raised at a higher rate of interest than this must reduce the aggregate revenue available for the remuneration of original proprietors.

In consequence of the larger rate of interest, 4½ per cent., borne by the sums raised on loans, this average rate of interest to shareholders cannot be stated at more than 3 per cent. on the aggregate of all the railways in the kingdom as the present rate of dividend. This, however, may be expected to improve from several causes; amongst others improvements in machinery and consequent reduction in working expenses, and the regular and gradual increase of traffic before stated, which it may be considered is due to increased population, development of trade, and a greater appreciation of the benefits of railway transit.

From another return prepared to an order of the House of Commons it appears that, in the session of 1849, an additional sum, amounting to 3,155,332*l.*, was authorized to be raised, of which 594,832*l.* may be raised by loans, which, being added to 143,717,773*l.*, the total amount which at the end of 1848 the various Railway Companies retained powers to raise, either by existing or by new shares, or by loans, will give a total sum of 146,873,105*l.*, from which, if 20,000,000*l.* be deducted, being the sum assumed to have been raised in 1849,

it would appear that railway companies retained, at the end of 1849, powers to raise the sum of 126,873,105*l.*; of this 25,200,383*l.* was held by 59 railway companies, who, at the end of 1848, had not begun their works, 1,507 miles in length, and it may therefore be concluded that a large proportion of this latter sum will, in all probability, not be raised for railway purposes, and, therefore, that after making this deduction, there remained a power to raise about 100,000,000*l.* for the completion of about 1,000 miles, and the construction of 3,523 miles not then commenced, and of which, probably, as at present sanctioned by the Legislature, a large proportion never will be commenced, and the capital, therefore, not be required.

From the Returns of accidents made to the Commissioners by the several Railway Companies, abstracts of which are attached to this Report, it appears that during the year 1849 only five passengers were killed from causes beyond their own control, being a great reduction on the number thus returned in the preceding year. The number returned as injured by accidental causes beyond their own control has also been very much decreased, being one-third less than in 1848. The whole number of passengers killed in the three years 1847, 1848, and 1849 were 30, 21, and 23; and of persons employed upon railways 124, 138, and 127 respectively. The number of trespassers and other persons neither passengers nor employed in any capacity upon railways which have been killed has amounted to 57, 43, and 52 for the three years 1847, 1848, and 1849; of these last three were determined cases of suicide.

Considering that the passengers who availed themselves of the railways in this country for the purposes of locomotion amounted, in the year 1849, to the very large number of 63,841,539, being an increase of 10 per cent. upon the preceding year, and of 16 per cent. upon the number conveyed in 1847, it is most satisfactory to perceive that there has not been a corresponding increase in the number of accidents.

In the case of a serious accident by which five persons were killed and several horses killed or injured on the night of the 10th February, 1849, near Rockliffe on the Caledonian Railway, the Commissioners sent down one of their inspecting officers who, after inquiring into the attendant circumstances, reported that it was caused by one of the wheels of the tender changing its position upon its axle whilst the train was in motion, and so breaking up the road and causing the greater part of the train to be projected down an embankment about 10 feet in height. The luggage-van next to the tender, and a first-class carriage, remained on the line, as also did the last carriage of the train, the injury having occurred principally in a central carriage, immediately preceding a heavy post-office van, in which the post-office clerks were employed in sorting letters. It appeared to the inspecting officer that the wheel had been improperly fitted in the first instance in the manufactory, and as a great number of wheels, fixed in a similar manner, were in daily use upon railways, and the accident had occurred to this wheel after it had travelled from 12,000 to 13,000 miles, the Commissioners caused a circular to be sent to the Railway Companies calling attention to the remarks of the inspecting officer upon the advisability of an examination of all wheels so fixed, and the adoption of measures to prevent a recurrence of a similar catastrophe.

The Commissioners think it right to advert shortly to a case of considerable interest to an important mineral district in Monmouthshire, in which their assistance was sought in the adjustment of difficulties which arose between the proprietors of the Monmouthshire Railway and Canal and the mining and manufacturing interests, to which they afford the only outlet to a port for the shipment of their produce. This district is one which, as its mineral resources have become developed, has provided itself first with canals, and then with tramroads, upon which, for many years, locomotive engines have been used, as also horse-power. The canals and the principal tramroads are the property of the Monmouthshire Railway and Canal Company; but there are numerous other tramways belonging to individuals and other Companies which are connected with them, and to which they afford the only means of arriving at the town of Newport, the shipping place of the district.

The Railway Company having obtained Acts of Parliament by which they were to adapt their lines for locomotive traction, and to carry passengers, proceeded to take steps for the alteration of their lines from tramways to edge

railroads; but as the rolling stock in use was the exclusive property of other parties who worked over the tramways paying toll, the proposed alteration, involving very considerable expense to those parties, as well as prospectively to those who owned the various branch tramways, produced great discontent in the district among the various mining and manufacturing interests, and memorials were sent to the Commissioners praying their interference.

These memorials having been forwarded to the Railway Company, it appeared that the intervention of the Commissioners might be useful in adjusting the matters of difference, and they accordingly sent an officer to inspect the lines and examine into the circumstances complained of, whose report having been forwarded to the Company, they expressed their willingness to adopt the suggestions contained in it, as calculated to promote the interests of the Company and the welfare of the district.

During the year 1849 it has become the duty of the Commissioners, in consequence of memorials received from several towns and from many influential persons on the line of the Oxford, Worcester, and Wolverhampton Railway, to consider the course to be adopted with reference to the completion of that railway, under the powers vested in them by the 131st Section of that Railway Company's Act, 1845, by which it is enacted that, in the event of the Oxford, Worcester, and Wolverhampton Company failing to complete their railway and branches authorized by that Act, "by neglecting at any time to proceed therewith in such manner as to afford a reasonable security for the completion thereof within the aforesaid period, it shall be lawful for the said Great Western Railway Company, after giving one month's notice of their intention so to do, to enter upon the said railway, and to proceed with the construction thereof, and to exercise all or any of the powers of the Company hereby incorporated in relation thereto, and if at any time the said Company hereby incorporated shall, in the opinion of the Board of Trade, fail to proceed with the construction of the said railway in manner aforesaid, the Great Western Railway Company shall, on being required so to do by the said Board, enter upon the said railway, and shall complete the same as aforesaid; and in such an event it shall not be lawful for the Company hereby incorporated, or the Directors thereof, at any time from and after such entry as aforesaid, unless with the special consent of the said Board of Trade, to declare, make, or pay any interest or dividend upon any of the shares in the said undertaking, or to the holders or proprietors thereof, until after the whole of the said railway shall have been constructed and opened for public use."

A number of petitions having been received, towards the end of August and September, setting forth that the Oxford, Worcester, and Wolverhampton Company were stopping their works throughout their whole line, and praying that the Commissioners would require the Great Western Company to enter upon the railway and complete it, the Commissioners communicated with the Companies, and caused the Railway to be inspected by one of their officers, who reported that it was about half constructed, that a great portion between Evesham and Dudley, including the Branch to Stoke, was completed, with the exception of the permanent way and stations; that on the part of the line between Oxford and Evesham, much had been done, and the works were in an unfinished state, causing, in some few instances, inconveniences to the neighbourhoods in which they were situated, and interruptions to the traffic on the public roads; that in this state the works were apparently abandoned, there being no men to be seen at work on the line, and that the postponement of the works was producing serious injury to them, and was likely, therefore, to cause an enlarged expenditure, if much prolonged.

The Commissioners also saw deputations from the Companies on this subject, and being fully satisfied that the Oxford, Worcester, and Wolverhampton Company were failing to proceed with the construction of their railway so as to afford a reasonable security for its completion within the period authorized by their Acts, and having given due notice to the Companies they at length called upon the Great Western Company, by a requisition bearing date the 17th January last, to enter upon the Oxford, Worcester, and Wolverhampton Railway, and complete it. The papers connected with this subject will be found in the Appendix.

An instance in which the Commissioners have deemed it their duty to interfere and institute legal proceedings is in the case of the Edinburgh, Perth,

and Dundee Railway Company. The 11th section of the Act 7 and 8 Vict., c. 85, provides that it shall be lawful for the Postmaster-General to send any mail guard with bags not exceeding the weight of luggage allowed to any other passenger, by any train other than a mail train, upon the same conditions as any other passenger. It appears that for some time the mail bags on this line were forwarded under the charge of mail guards travelling at the fare of second-class passengers by ordinary trains; the Company, with a view to obtain a higher rate of payment for the conveyance of the mails, determined to refuse to allow the mail guards to take up or leave bags at any of the intermediate stations, and to prohibit any persons being admitted to the station platforms for the purpose of giving bags to, or receiving bags from, the guards, unless payment was made for each bag as a parcel. The Postmaster-General being of opinion that this course, if persisted in, would compel an increased expenditure on the part of his department for railway services, and deprive towns on the line of part of the accommodation which they enjoy, represented to the Commissioners that it would be desirable to enforce the provisions of the Statute. The Commissioners being advised that the Company are bound to carry the mail bags and guards, as required by the Post-office, have issued their certificate for the Law Officers of the Crown to take the necessary measures to enforce a compliance with the provisions of the General Act for the Regulation of Railways, 7 and 8 Vict., c. 85.

The Reports made by the Commissioners on subjects connected with railways in the colonies, which were referred to them in 1849, are given in the Appendix. The several clauses inserted in Railway Acts of last session by Committees of the House, or at the instance of other parties, under which reference can be made to the Commissioners, are also given. They relate to a great variety of subjects, such as disputes between Railway Companies on matters arising in the construction of the works, including accommodation and pecuniary adjustments; as to use of railways by companies other than the proprietors, and the tolls to be paid by them; as to the construction of bridges in lieu of level crossings, or the adoption of regulations for the security and convenience of the public thereat; as to the use of locomotive engines passing near docks and buildings, and the precautions to be adopted for the prevention of danger from fire; as to the correction of inconveniences arising from the amalgamation of Railway Companies, and from the acquisition of canals by Railway Companies; and also, in one case, it is provided that the Commissioners are to appoint an auditor to audit the accounts of a Railway Company.

The usual return of accidents, and an abstract of the statistical returns forwarded to the Commissioners by the Railway Companies will be found at the end of the Appendix.

H. LABOUCHERE.
GRANVILLE.
EDWARD RYAN.

*Office of Commissioners of Railways,
Whitehall, July 10th, 1850.*

APPENDIX.

APPENDIX No. 1.

MIDLAND RAILWAY.—(*Sheffield Tunnel.*)

Appendix No. 1.

Midland Railway.
(*Sheffield Tunnel.*)

SIR,

Whitehall, January 10, 1849.

I HAVE to report, for the information of the Commissioners, that I yesterday inspected the Sheffield Tunnel of the Midland Railway, with a view to ascertain the efficiency of the repairs since the accident of the 22nd of March, 1848, when about 65 feet of the west end fell in. The Company have repaired the damage by shortening the tunnel at this end 80 feet, leaving it an open cutting; they had commenced rebuilding the tunnel as it originally stood; but, to meet some arrangements of the Manchester, Sheffield, and Lincolnshire Railway Company, this alteration in the length of the tunnel was made. I also examined the remainder of the tunnel, and particularly the side wall next the hill in which Captain Laffan, on his inspection after the accident, observed numerous cracks; I judge from their appearance they have not increased since then, and I conclude that they occurred on the striking of the centre, and that no further settlement has since taken place. I am of opinion that the tunnel may be safely re-opened for the conveyance of the passenger traffic.

On referring to the Act of Parliament, I find there is no mention made of a tunnel; but it is directed that the connexion of this railway with the Manchester, Sheffield, and Lincolnshire Railway shall be made under the sanction of the Lords of the Committee of Privy Council for Trade. It is therefore, I presume, within the province of the Commissioners to sanction, if they think proper, the shortening of the tunnel.

I have, &c.,

Captain Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

APPENDIX No. 2.

LONDON AND SOUTH WESTERN RAILWAY.

Appendix No. 2.

London and South
Western Railway.

SIR,

Whitehall, January 10, 1849.

I HAVE to inform you that, in compliance with the directions of the Commissioners of Railways contained in your letter of the 8th September last, I placed myself in communication with Mr. Locke, during the experiments tried by him, with a view to diminishing the noise occasioned by trains passing the bridge on the London and South Western Railway, over the Westminster-road. These experiments were tried on the bridge over Church-lane, Lambeth, and have led to a very successful result, inasmuch as it is found that by laying the permanent way over the bridges on ballast, the noise produced by passing trains is very much lessened, the vibratory action of the train upon the metal forming the cast-iron arched girders being almost nullified. The system consists in laying cast iron plates with flanges and ribs cast upon them, for the purpose of gaining additional strength where required, upon the flange of the girder which carries the roadway. These plates are cemented together so as to be impervious to water, and are slightly arched, having channels formed along their ends to carry any water that might fall upon them, away to the extremities of the bridge. Upon the plates, a few inches of ballast have been spread, and longitudinal timbers carrying the rails are laid upon it, care being taken that they shall in no place touch the metal of the beams. This method of laying railways upon cast-iron bridges may be found generally useful for checking the vibration where it might be considered to be injurious, and is certainly most effective in deadening sound. With reference to the bridge over the Westminster-road, I consider that, as the trains are scarcely in motion when passing over it, and the traffic is so great beneath as to produce a constant noise counteracting the effect of the trains, it is not necessary to urge upon the Company at present the adoption of any particular precaution or remedy; but with regard to other streets or roads crossed by iron bridges where the trains pass more rapidly, it appears to me that it would be productive of great benefit to the public using those thoroughfares, more particularly where the traffic upon them is large, if this method of reducing the noise produced by passing trains, which is at present very great, were adopted.

With respect to the screen upon the Westminster-road bridge, of the necessity of which I was desired to consider and report, I have to inform you that I am not of opinion that the erection of a screen or fence beyond the height of the present parapet of the bridge will be productive of any benefit, at the same time I think it would be advisable if engine-drivers were desired not to stand with their engines on this bridge more than necessary; and if they were cautioned to use their whistles as little as is consistent with the safety of the traffic upon the railway when passing through the town, and to avoid using them altogether if possible when upon or near any of the bridges over principal thoroughfares.

I have, &c.,

Captain Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

B

Appendix No. 2.
London and South
Western Railway.

SIR,

Office of Commissioners of Railways, Whitehall,
January 11, 1849.

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed extracts from a report made to them by Captain Simmons, on the precautions necessary to be taken on certain parts of the Waterloo-bridge extension, for the security of passengers on horse-back, or in carriages, on the roads adjacent thereto; and to express their hope that the Directors of the Company will cause the recommendations made by Captain Simmons, with respect to the adoption of the plan for the diminution of noise at the iron railway bridges, which has been proposed and tried by Mr. Locke, and with respect to the directions to be given to the engine-drivers for the part of the line referred to, to be complied with as soon as possible.

I have, &c.,

The Secretary of the London and
South Western Railway Company.

H. D. HARNESSE,
Capt., Royal Engineers.

Appendix No. 3.
East Lancashire
Railway.
(Burnley to Colne.)

APPENDIX No. 3.

EAST LANCASHIRE RAILWAY.—(Burnley to Colne.)

SIR,

Liverpool, January 24, 1849.

I HAVE the honour to report, for the information of the Commissioners, that I have this day inspected a portion of the East Lancashire Railway, extending from Burnley to Colne, a distance of six miles.

The engineering difficulties on this line have been very great, the nature of the country requiring considerable earthworks, and the formation through which the line passes affording the worst possible material for such works, being a kind of laminated clay, which not only slips in the cuttings and embankments, but the land itself also slips under the weight of the embankments; of these latter the most formidable has occurred at the Marsden Viaduct, a structure nearly 50 feet high, and consisting of five semicircular arches of 40 feet span; the heavy earthworks on the west side have caused a land-slip to the east, in the line of the viaduct, which has, to a slight extent, carried the viaduct with it, and the embankment on the west side has caused a slip to the north; the remedial measures adopted have been to lighten the embankments at either end by substituting timber stagings, and to build up nearly solid the two eastern arches, to form an abutment against the pressure in that direction. These measures appear to have arrested the slips, and the viaduct may, I consider, be deemed safe, but I would recommend that, for some time, an intelligent person should be employed to watch carefully and report *daily* its state.

At Bardon Cluff, on a heavy embankment, about 30 yards of the down-line has yet to be laid. There is nothing, however, to prevent the work being completed before the 28th, and the engineer has engaged to have it done by that time.

There are three level crossings for public roads, the gates of which close both across the roads and railway, and lodges are provided for the gatekeepers. These crossings occur at the following places:—

2 miles 55 chains from Burnley, parish road, from Burnley to Penelle Forest.

3 miles 69 chains from Burnley, public road, from Burnley to Colne.

4 miles 20 chains from Burnley, turnpike-road, to Catlow.

At 1 mile 52 chains from Burnley, a bridge over Bardon-lane has been substituted for a level crossing, which, it is stated, has been done with the consent of the Commissioners. The Parliamentary plans do not appear in other respects to have been deviated from.

I consider the line may be safely opened for passenger traffic, but I would recommend that, for some time, a very moderate speed should be used over it.

I have, &c.,

Captain Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
January 26, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you that, on considering the report made to them by Captain Wynne, after his recent inspection of those portions of the East Lancashire Railway between Burnley and Colne and between Burnley and Garron Level Crossing, they do not object to their being opened for public traffic on the day proposed by the Company; but they hope the Directors will make arrangements to ensure a strict attention to the recommendations made by Captain Wynne in the accompanying extracts from his Report, for a daily report by a competent person to the resident engineers on the state of the Marsden Viaduct, and for a limitation of the speed upon the line until the works have consolidated.

I have, &c.,

The Secretary of the
East Lancashire Railway Company.

H. D. HARNESSE,
Capt. Royal Engineers.

APPENDIX No. 4.

Appendix No. 4.

MIDLAND RAILWAY.—(*Leicester and Swannington Branch.*)Midland Railway.
(*Leicester and
Swannington
Branch.*)

SIR,

February 14, 1849.

I HAVE to report, for the information of the Commissioners, that I yesterday inspected the undernamed portions of the Leicester and Swannington branches of the Midland Railway.

1st. A line from Whitwick, a station two miles from the Swannington end of the Leicester and Swannington Railway, to Burton-on-Trent, a distance of 13 miles 74 chains, where it forms a junction with the Midland Railway.

2nd. A branch from the above called the Swadlencote Branch, commencing about three miles from the Burton end, and running east for 2½ miles to collieries from which the branch takes its name.

Five level crossings are authorized on the portions of line I inspected; of these only two are retained; for the three others, two over and one under-bridge have been substituted. The two level crossings which have been retained have gates closing across the road, but no lodges have as yet been erected. Mr. Liddell, the engineer, assured me that temporary boxes for the accommodation of the gatekeepers had been prepared, and were ready to be put down. As the Act enjoins that at all the level crosses lodges shall be *permanently maintained*, the Company should be called upon to erect such buildings without loss of time.

The only other deviation from the Parliamentary plan which I have to notice is in the parish of Ashby-de-la-Zouch, near the Moira collieries, where, for about the distance of a mile the line of railway passes beyond the limits. The line is not disimproved by the deviation.

The platforms at the several stations were incomplete, and as in such a state they must be considered to involve a certain amount of danger to the public, I would recommend, in order to allow full time for their completion, that the opening should be postponed one week from the date of my inspection, that is, till the 20th instant.

I have, &c.,

GEORGE WYNNE,
Capt. Royal Engineers.Capt. Harness, R.E.,
&c. &c.Office of Commissioners of Railways, Whitehall,
February 14, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the report made to them by Capt. Wynne, after his inspection of the line of Railway between Whitwick and Burton-on-Trent, and to inform you that, after considering that report, they have directed that the opening of the line for public traffic shall be postponed for one week from this date.

I am also to express the hope of the Commissioners that no time will be lost in completing the requisite permanent lodges for gatekeepers at the two level crossings, which are at present without them, and to request an explanation of the circumstances under which the deviations remarked upon by Captain Wynne, from the plans sanctioned by Parliament, have been made without due authority.

I have, &c.,

H. D. HARNESS,
Capt. Royal Engineers.The Secretary of the
Midland Railway Company.Secretary's Office, Derby,
February 20, 1849.

GENTLEMEN,

In reply to your letter of the 14th instant, as to the deviations mentioned in Captain Wynne's report, I beg leave to hand you a copy of a letter received from the engineer on the subject, viz. :—

DEAR SIR,

24, Abingdon-street, Westminster.

I HAVE to state, in reference to Capt. Harness's letter, enclosing report from Capt. Wynne, that there will be as little delay as possible in completing the level crossing lodges, the contracts for building them having been made.

The deviation of the line alluded to was made to avoid the crossing of a colliery inclined plane, is entirely within the land of the Marquis of Hastings, to whom the colliery belongs, and the gradients and curves are in no respect injured by it; in fact, excepting to the Marquis of Hastings and the Railway Company, as avoiding the works of the Moira Colliery, the deviation is so entirely unimportant, that it was overlooked by me in setting out the line that any authority for the alteration was required.

Yours truly,
CHARLES LIDDELL.

To J. F. Bell, Esq.

I have, &c.,
J. F. BELL, Secretary.Capt. Harness, R.E.,
&c. &c.

Appendix No. 5.

Eastern Counties
Railway.*(Dereham and
Fakenham Branch.)*

APPENDIX No. 5.

EASTERN COUNTIES (NORFOLK) RAILWAY.—(*Dereham and Fakenham Branch.*)

SIR,

February 24, 1849.

I HAVE to report, for the information of the Commissioners, that I yesterday inspected the branch line of the Norfolk Railway, between Dereham and Fakenham, a distance of 12 miles 1 furlong. At a distance of $2\frac{1}{2}$ miles from Dereham there is an occupation under-bridge through an embankment 33 feet high; the lateral thrust of this mass of earth has forced out each end of the arch for a length of about 4 feet, entirely separating it, by a fissure several inches wide, from the centre part of the arch; the east face and wing walls are the worst, and are strongly shored up; the bridge is 84 feet in length, and 14 feet high to the crown of the arch.

The following level crossings of public roads occur, viz.:—

1. On the road from Dereham to Swanton.
2. Another on the same road.
3. On the road from Hoe to Grasshale.
4. On the road from Dereham to Worthing.
5. On the road near Elmham.
6. One at the village of Ryburgh, where there is a station.

The above-named crossings have all gates shutting across the road, and some have gates which close both across the road and railway.

The level crossing at Ryburgh, I was informed, is not sanctioned by the Act, but is a substitution for an over-bridge.

I cannot recommend the Commissioners to sanction the opening of the line until the under occupation-bridge at 2 miles 6 furlongs from Dereham has been substantially repaired.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
February 26, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the inclosed copy of the report made to them by Capt. Wynne, after inspecting the line of railway between Dereham and Fakenham, and to inform you that the Commissioners have, for the reasons therein stated, postponed the opening of the line for one month from this date, but that on being informed that the defects objected to by Capt. Wynne have been removed, they will appoint an officer to re-inspect the line.

I am also to request an explanation of the circumstances under which, as stated in Capt. Wynne's Report, a level crossing of a public road has been substituted at Ryburgh for the over-bridge approved by Parliament.

I have, &c.,

The Secretary of the
Norfolk Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

Eastern Counties Railway Office,
Bishopsgate Station, London, March 2, 1849.

SIR,

WITH reference to your letter of the 26th ult., relative to the level crossing at Ryburgh, I beg to send you extract from a letter that I have received from the engineer of the Dereham and Fakenham Line, in reply to one I addressed to him, inclosing your said letter.

I have, &c.,

The Secretary to the
Railway Commissioners.

C. P. RONEY, Secretary.

Extract referred to.

February 28, 1849.

"As regards the level crossing at Ryburgh, there was a meeting on the spot, at which the parish authorities—Col. Fitzroy, Mr. Bidder, Mr. Tile and myself—attended, where, on the representation that the level crossing would be much more convenient on account of the station, the point was conceded, and the level crossing sanctioned.

"I have, &c.,

"C. P. Roney, Esq."

"G. H. PHIPPS."

SIR,

March 14, 1849.

I HAVE to report, for the information of the Commissioners, that I yesterday re-inspected the bridge on the Fakenham branch of the Norfolk Railway, which in my report of

the 24th ultimo I had stated to be unsafe, and found that it had been substantially repaired, the objectional parts having been taken down and rebuilt in cement. I consider that the line may now be safely opened for the conveyance of passengers, and recommend that the usual certificate to that effect be granted.

I have to remark, that at present there is no turn-table at Fakenham, so that the engine has to make the return journey tender foremost. It is the intention of the Company to erect a turn-table, and one, I am informed, is provided; but a recommendation from the Commissioners, that no unnecessary delay should be incurred, might be desirable, and would probably expedite its erection.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

GEORGE WYNNE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
March 3, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to refer to you the accompanying letters from the Eastern Counties Railway Company, with respect to the unauthorized level crossing of a public road, reported by you to have been made in the construction of the Dereham and Fakenham branch of the Norfolk Railway; and to request you to report on the degree of danger and inconvenience the public are likely to sustain from the substitution of a level crossing for the bridge approved by Parliament at the places in question.

I have, &c.,

Capt. Wynne, R.E.,
&c. &c.

H. D. HARNESSE,
Capt. Royal Engineers.

SIR,

April 12, 1849.

IN reply to your letter, directing me to report on the degree of danger and inconvenience the public are likely to sustain from the substitution of a level-crossing for the bridge approved by Parliament, at the village of Ryburgh, on the Dereham and Fakenham Railway, I have to inform you that, on my second inspection of the line, I examined the locality; the village where it occurs is very small and straggling; the railway, at the spot where the level crossing is situated, is in a cutting 4 feet deep, and the sides have been cut away to make the approaches at 1 in 20, which would have been the ascending inclination to the bridge had it been built; if the descents are tailed out to 1 in 30, which I would recommend, the public using the same will be rather gainers by the substitution. From inquiries I made of Colonel Fitzroy, one of the principal proprietors, and others, I learnt that the substitution of the level-crossing for an over-bridge was a compromise between the inhabitants and the Railway Company, the former yielding the bridge provided the latter would give them the advantage of a station.

The traffic on this line, both for goods and passengers, must for many years be of very moderate extent; and this, combined with the circumstance of the station being close to the crossing, and thereby securing a good look out, will tend to lessen the danger and inconvenience inherent to level-crossings.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
April 13, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you that, having considered further reports from their Inspecting Officer, upon the level crossing on the Dereham and Fakenham (Eastern Counties) Railway, at the village of Ryburgh, they are of opinion that the level crossing in question is unauthorized, and that the Company may be compelled to substitute a bridge; but that as their officer has reported the crossing to be one on which there is but little traffic, the Commissioners do not deem it expedient at present to compel the Company to erect a bridge, but they desire to call their attention to an improvement suggested by Capt. Wynne, viz., that the approaches to the level crossing should be made more gentle, by reducing the inclination from one in twenty, to one in thirty.

I have, &c.,

H. D. HARNESSE,
Capt. Royal Engineers.

The Secretary of the Eastern Counties Railway.

APPENDIX No. 6.

MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE RAILWAY.—(Barton Branch.)

SIR,

February 27, 1849.

I HAVE the honour to report, for the information of the Commissioners, that I have this day inspected the Barton branch of the Manchester, Sheffield, and Lincolnshire Railway.

Appendix No. 5.

Eastern Counties
Railway.

(Dereham and
Fakenham Branch.)

Appendix No. 6.

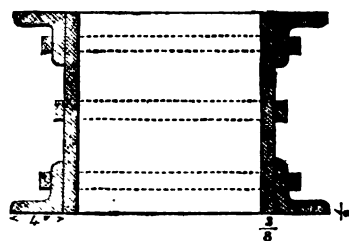
Manchester,
Sheffield, and Lin-
colnshire Railway.
(Barton Branch.)

Appendix No. 6.

Manchester,
Sheffield and Lin-
colnshire Branch.
(Barton Branch.)

This branch starts from the main line at New Holland, and runs in a westerly direction parallel to the Humber for a distance of 3 miles 7 furlongs, terminating at the town of Barton.

The line is perfectly straight, with the exception of the junction curve; it is also quite level, with the exception of a short ascending and descending plane of 1 in 132, the object of which is to obtain headway for the only bridge that occurs on the line, which is the viaduct over the Barrow Creek: this is a wooden structure of three spans of 30 feet each, and is of the usual strutted construction, the longitudinal timbers are single balks 14 inches deep; but the struts of the middle bay interfering with the navigation, they have been removed, and the necessary strength and stiffness obtained by adding wrought-iron plates and angle irons to the sides of the beams: the annexed sketch shows the arrangement of the iron-work.



There is but one level crossing of a public road, which is close to the bridge. The gates shut only across the road. The line is laid single, with two sidings. The formation level is sufficiently wide to carry a double line of rails.

There are no intermediate stations.

I found the line in good order, and in a state fit for the safe conveyance of passengers, I therefore beg to recommend that the usual authority for opening the line may be granted.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 7.

South Staffordshire
Railway.

APPENDIX No. 7.

SOUTH STAFFORDSHIRE RAILWAY.

SIR,

March 5, 1849.

I HAVE the honour to report, for the information of the Commissioners, that on the 1st of March I inspected a portion of the South Staffordshire Railway, extending from Walsall to a junction with the Midland, near Alrewas, the entire length of the line being 16 miles 77.5 chains.

The level crossings are numerous, being 12 in number. By a comparison with the Act they appear all to have received the sanction of Parliament; they have all gates closing across the railway as well as across the roads, and are supplied, in accordance with the Act, with lodges for the gatekeepers. The junction with the Midland is not yet put in; and about 200 yards of the line at that part has yet to be laid. The remainder of the permanent way, which is double throughout, is well laid and free from obstructions.

I would recommend the Commissioners sanctioning the opening of the line from Walsall to Lichfield, a length of 10 miles 50 chains, and postponing the remainder, from Lichfield to the junction with the Midland, near Alrewas, until the engineers of the Midland and South Staffordshire (Messrs. Barlow and M'Lean) certify that the junction has been properly put in, and the line completed up to that point.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
March 5, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the report made to them by Captain Wynne, after his inspection of a portion of the South Staffordshire Railway extending from Walsall to a junction with the Midland Railway near Alrewas, and to inform you that they do not object to the portion between Walsall and Lichfield being opened for public traffic; but that, under the circumstances stated by Captain Wynne, they consider it necessary to postpone the opening of the remainder for one month from this date. On being informed that the junction is completed and ready for inspection, the subject will again be considered by them.

I have, &c.,

The Secretary to the
South Staffordshire Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

April 5, 1849.

I HAVE to report, for the information of the Commissioners, that I yesterday re-inspected the portion of the South Staffordshire line between Lichfield and its junction with the Midland near Alrewas, and found those works to which I had objected in my former report as being incomplete, now finished, viz., the junction with the Midland Railway completed, except that the moveable tongue of the facing point, which is unavoidable on the up-line of the Midland, was not fixed, it not being usual to do so until the day before the opening.

Two semaphore signal-posts, commanding both railways, are erected on the Midland line; besides which there are auxiliary signals placed 400 yards from the main signals, from whence they are worked up each railway.

I consider the line may now be safely opened for the conveyance of passengers, and I recommend that the usual certificate be granted.

Appendix No. 7.
—
South Staffordshire
Railway.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

APPENDIX No. 8.

EAST LANCASHIRE RAILWAY.

Appendix No. 8.
—
East Lancashire
Railway.

SIR,

March 19, 1849.

I HAVE to report, for the information of the Commissioners, that, on the 16th instant, I inspected the Liverpool, Ormskirk, and Preston division of the East Lancashire Railway. This line is 22 miles 52 chains in length; it commences at Walton-le-Dale, in the parish of Blackburn, starting from the Blackburn and Preston Railway, and extends to Walton-on-the-Hill, where it joins the Liverpool and Bury Railway, about three miles from the former town. The line is laid double throughout. The rails are all laid, but there are some portions of the line yet to be ballasted. The platforms are all in a forward state, but incomplete; and some of the signal-posts, which are on the ground, remain to be put up: and the points at the junction with the Liverpool and Bury line are not yet put in. The inspection was not anticipated, before the 22nd instant, and the line is consequently in what may be called a rough state; but I consider that one week from this date will be sufficient to finish off the points I have alluded to, and place the line in a safe state for the conveyance of passengers; and I recommend that the Commissioners' certificate may restrict the opening of the line to that date, when a further inspection will be necessary.

There is a part of the line which passes through Rufford Moss, the construction of which has been attended with great difficulty and expense, owing to the depth of the moss and the treacherous nature of the ground. The line through this moss is carried for a length of 400 yards on a timber framing, the piles of which are driven about 40 feet into the moss; in several places vast quantities of material have been swallowed up, causing the ground to spew up on either side; but in all of them the bottom appears to have been reached; a fresh place, however, near the north end of the timber framing, has lately shown symptoms of sinking, and I consider it absolutely necessary, as a measure of safety, that this part of the line, for some time to come, shall be carefully watched *day and night*.

The only unauthorized deviation from the Parliamentary plans which I have to notice is the substitution of a level crossing for an over-bridge, on a parish road 8 miles 16 chains from the fixed point, and close to the town of Ormskirk; as it occurs at a spot where the railway is carried on an embankment 12 feet high, the road has to be raised for the level crossing that height; were it to be carried over the railway, it would be inconveniently steep to those making use of it. An under-bridge would have been the more convenient arrangement for the public. The Company, I am informed, have applied to Parliament to authorize the level crossing.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
March 19, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the report made to them by Captain Wynne, after inspecting the Liverpool, Ormskirk, and Preston Railway, and to inform you that for the reasons therein stated, they have postponed the opening for public traffic for one fortnight from this date, and appointed Captain Wynne to reinspect the line on the 26th instant.

I am at the same time to request you to call the attention of the Directors of this Company to the remarks made by Captain Wynne with respect to the portion of the line over Rufford Moss, and to express the hopes of the Commissioners that his recommendations will be strictly enforced. I am also to request an explanation of the circumstances under which, as appears by Captain Wynne's report, a level crossing has been substituted for a bridge.

I have, &c.,

The Secretary of the
East Lancashire Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

Bury, Lancashire, March 22, 1849.

REFERRING to your letter of the 19th instant, as to the postponement of the opening of the Liverpool, Ormskirk, and Preston line, the engineer has given attention to the remarks of Captain Wynne, and doubtless the railway will be in a satisfactory state for inspection on the 26th instant.

Appendix No. 8.
—
East Lancashire
Railway.

With regard to the substitution of a level crossing for an over-bridge, on a parish road near Ormskirk, I have to state that the Bridge shown on the Parliamentary plans would have made the road so inconveniently steep that it was considered desirable to substitute a level crossing. An application was made some time ago to the Commissioners to sanction the permanent substitution of this level crossing, but we were informed that the Commissioners had no authority to grant the application. The Company have therefore made an application to Parliament in the present Session, to enable them permanently to dispense with a bridge at this point; and in the mean time a temporary level crossing for carriages has been made, with the sanction of the parish authorities, and a bridge provided for foot passengers. There is very little traffic upon the road, and the erection of the bridge would be distasteful to the public on account of the steepness of the approaches, and the making of the approaches will be very prejudicial to the adjoining properties.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

JAMES SMITHELLS,
Secretary.

*Lancashire and Yorkshire Railway Board Room,
Manchester, March 24, 1849.*

SIR,

I AM desired by the Directors of this Company to enclose, for the information of the Honourable the Commissioners of Railways, a copy of a letter addressed by me to the East Lancashire Railway Company, on the 19th inst., specifying such requirements as to signals as are necessary, in the opinion of this Company, for the safety of the public and the proper working of both Company's lines, at the point of junction of the Liverpool and Bury and Liverpool, Ormskirk, and Preston lines. To this letter no reply has yet been received, and as the Directors of this Company have every reason to believe that preparations are making for the opening of the Liverpool, Ormskirk, and Preston line irrespective of such requirements, they beg that the Honourable the Railway Commissioners will *immediately* authorize some competent party to examine the junction of the lines and decide upon the proposed mode of working before allowing such opening to take place.

It appears to the Directors of this Company that it would also conduce to the public safety if, before the opening of a new line, the trains from which are to pass over the line of another Company, the latter Company should have some proper and previous notice thereof (say of not less than a week).

A few years ago the East Lancashire Company were allowed by the Board of Trade to open their line to Clifton, and to run along the line of the Manchester and Bolton Company; though the latter Company received no notice of the same until *after* the first train, on the day of opening, had passed. The Directors of this Company conceive, that very serious inconvenience and much danger must necessarily ensue from the adoption of such a line of proceeding.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

JOHN DUNSTAN, Jun.

*Lancashire and Yorkshire Railway Board Room,
Manchester, March 19, 1849.*

SIR,

I AM directed to inform you that, with a view to ensure the safety of the public, and the proper working of the respective lines of the East Lancashire Company and this Company, at the junction of the Liverpool, Ormskirk, and Preston, and Liverpool and Bury Railways, this Company will require, prior to the opening of the Liverpool, Ormskirk, and Preston line, that a signal similar to those in use on the Liverpool and Bury line shall be erected on the Liverpool, Ormskirk, and Preston line, at a point 400 yards distant from the junction.

I am desired to state further, that this Company will erect similar signals on the Liverpool and Bury line at a distance of 400 yards on each side of the point of junction, which signals when erected, and including that on the Liverpool, Ormskirk, and Preston line, will be placed under the control of a man to be appointed by this Company.

I have, &c.,

James Smithells, Esq.,
&c. &c.

JOHN DUNSTAN, Jun.

Lancashire and Yorkshire and East Lancashire Railways.

Instructions to the Guards, Engine-drivers, Stokers, and Pointsmen, respecting the Signals at the Junction of the Liverpool and Bury and Liverpool, Ormskirk, and Preston Railways.

1. There are three signal-posts at the junction.
2. These signals must always be kept as stopping signals, and on the approach of any train, as soon as the pointsman hears the whistle, he must, if the line be clear, turn the signal. Unless this alteration be made, every train must stop at a distance of 100 yards from the junction.
3. The engine-driver of every Lancashire and Yorkshire train, when within 800 yards of the junction, must give a long-continued whistle to warn the pointsman of his approach.
4. The engine-driver of every East Lancashire train, when within 800 yards of the junction, must give a succession of short distinct whistles, and reduce his speed to 5 miles per hour.

5. In case of the Lancashire and Yorkshire and East Lancashire passenger trains approaching the junction at the same time, the Lancashire and Yorkshire trains are to have the right of road, and the East Lancashire trains must be stopped until the Lancashire and Yorkshire trains have passed.

6. If the East Lancashire trains have to follow the Lancashire and Yorkshire trains, or the Lancashire and Yorkshire trains have to follow the East Lancashire trains past the point of junction, an interval of five minutes must elapse previous to their being allowed to do so, and then great caution, and the general regulations as to distance, must be observed.

7. All luggage trains must stop for passenger trains.

8. In foggy weather, as well as at dark, the lamps at the different signal-posts must always be kept lighted, and explosive signals and red port-fires ready, and used if required.

9. Every engine-driver, guard, stoker, and pointsman is required always to have about his person a copy of the rules and regulations and time-tables of both Companies, and to make himself perfectly acquainted with them; and he will be held responsible for any accident that may arise from ignorance of them.

10. Every guard, engine-driver, stoker, and pointsman must apply, not later than the last day but one of the month, at his Superintendent's office, for a time-table of both Companies for the ensuing month.

11. The strictest attention and obedience to the foregoing rules is required from all the guards, engine-drivers, stokers, and pointsmen of both Companies, and others to whom they may relate, upon pain of instant dismissal; and any neglect of or inattention to these orders coming to the knowledge of any servant of either Company, must be immediately reported to the Superintendent, or the party not so reporting will subject himself to a like penalty.

Appendix No. 8.

East Lancashire
Railway.
(Barton Branch.)

Office of Commissioners of Railways, Whitehall,
March 26, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 24th inst., and to inform you that they have instructed Captain Wynne to inquire particularly and to report to them whether such signals have in his opinion been erected as are necessary for the safety of the public and the proper working of the lines of both Companies, at the junction of the Liverpool and Bury with the Liverpool, Ormskirk, and Preston Railway; and that unless Captain Wynne shall report that the public safety is secured, they will not sanction the opening of the Liverpool, Ormskirk, and Preston Railway.

I have, &c.,

The Secretary of the
Lancashire and Yorkshire Railway Company.

H. D. HARNESSE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
March 26, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed communication (in original), received this day from the Lancashire and Yorkshire Railway Company, and to request your particular attention to its contents, and to the necessity of reporting that the line cannot be opened with safety to the public unless the signals are such as you approve.

I also enclose for your information a copy of the letter which has been addressed to the Lancashire and Yorkshire Railway Company, in reply to their communication.

I have, &c.,

Capt. Wynne, R.E.,
&c. &c.

H. D. HARNESSE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
March 26, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you that they have received a communication from the Lancashire and Yorkshire Railway Company, requesting them to direct an officer of this department to examine the junction of the Liverpool, Ormskirk, and Preston Railway with the Liverpool and Bury Railway, and to decide upon the proposed mode of working the junction before the opening of the former takes place; and also suggesting that it would conduce to the public safety if, before the opening, proper previous notice thereof were given to the Lancashire and Yorkshire Railway Company; and, that in consequence thereof, Capt. Wynne has been directed to give particular attention to the arrangements at the junction referred to, and to report that the Liverpool, Ormskirk, and Preston Railway cannot be opened with safety to the public unless those arrangements are approved by him.

I am also to request your attention to the suggestion, that due notice of the intended opening should be given to the Lancashire and Yorkshire Railway Company, which appears to the Commissioners to be a reasonable requirement on the part of that Company.

I have, &c.,

The Secretary of the
East Lancashire Railway Company.

H. D. HARNESSE,
Capt. Royal Engineers.

Appendix No. 8.
 East Lancashire
 Railway.
 (Barton Branch.)

Lancashire and Yorkshire Railway Board Room,
 Manchester, March 27, 1849.

SIR,

I AM instructed by the Directors of this Company to acknowledge the receipt of your letter of the 26th instant, and the prompt attention of the Honourable the Commissioners of Railways in appointing Capt. Wynne to inquire into, and report upon, the signals proposed for the working of the junction of the Liverpool and Bury and Liverpool and Ormskirk Railways.

The Directors wish me at the same time to enclose, for Capt. Wynne's information, a copy of the instructions as to signals proposed to the East Lancashire Company, and already in force at the points of junction of this Company's lines with the following lines—

London and North Western.
 Great Northern.
 Midland.
 Blackburn, Clithero, and West Yorkshire.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

JOHN DUNSTAN, Jun.

Lancashire and Yorkshire Railway.

Instructions to Guards, Engine-drivers, Stokers, Pointsmen, and others, respecting the Signals at Junctions with the Lancashire and Yorkshire Railway.

1. There are three signal-posts, at points 400 yards distant from the junctions.
 2. These signals must always be kept as stopping signals, and on the approach of any train, as soon as the pointsman hears the whistle, he must, if the line be clear, turn the signal. Unless this alteration be made, every train must stop at a distance of 100 yards from the point of junction.
 3. The engine-driver of every train on the main line, when within 800 yards of the junction, must give a long-continued whistle, to warn the pointsman of his approach.
 4. The engine-driver of every other train, when within 800 yards of the junction, must give a succession of short distinct whistles, and reduce his speed to five miles per hour.
 5. In case of trains on both lines approaching the point of junction at the same time, the trains on the main line are to have the right of road, and the other trains must be stopped until such trains on the main line have passed.
 6. If the other trains have to follow the trains on the main line, or *vice versa*, past the point of junction, an interval of five minutes must elapse previous to their being allowed to do so, and then great caution, and the general regulations as to distance, must be observed.
 7. All luggage-trains must stop for passenger-trains.
 8. In foggy weather, as well as at dark, the lamps at the different signal-posts must always be kept lighted, and explosive signals and red port-fires ready, and used if required.
 9. Every engine-driver, guard, stoker, and pointsman is required always to have about his person a copy of the rules and regulations and time-tables of all Companies' trains passing over the main line, and to make himself perfectly acquainted with them; and he will be held responsible for any accident that may arise from ignorance of them.
 10. Every guard, engine-driver, stoker, and pointsman must apply, not later than the last day but one of the month, at his superintendent's office, for a time-table of both Companies for the ensuing month.
 11. The strictest attention and obedience to the foregoing rules is required from all the guards, engine-drivers, stokers, and pointsmen of all companies using the main line, and others to whom they may relate, upon pain of instant dismissal; and any neglect of or inattention to these orders coming to the knowledge of any servant of either Company, must be immediately reported to the superintendent, or the party not so reporting will subject himself to a like penalty.
- N.B.—The main lines of the Lancashire and Yorkshire Company extend from Liverpool to Salford, and from Liverpool and the Victoria Station at Manchester to Goole.

SIR,

Skipton, March 27, 1849.

I HAVE to report, for the information of the Commissioners, that I yesterday re-inspected the Liverpool, Ormskirk, and Preston Railway, belonging to the East Lancashire Railway Company, and I found the works noticed in my former report as being in an incomplete state were now finished. Since my former inspection an alteration with regard to signals at the junction with the Liverpool and Bury Railway was in progress; the semaphore signals, which the East Lancashire Company had erected at the junction, having been removed, and disk signals were erecting by the Lancashire and Yorkshire Railway Company in lieu of them. These signals, at the time of my re-inspection, were not *all* up, and the arrangements with the two Companies for working them were incomplete. Until, therefore, I see these signals completed, and am satisfied with the sufficiency of the establishment and arrangements for working them with safety to the public, which I am not at present, I must report that the opening of the Liverpool, Ormskirk, and Preston line of the East Lancashire Railway would be attended with danger to the public using the same.

I have, &c.,

GEORGE WYNNE,
 Capt. Royal Engineers.

SIR,

Office of Commissioners of Railways, Whitehall,
March 28, 1849.

Appendix No. 2.

East Lancashire
Railway.
(Barton Branch.)

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the report made to them by Captain Wynne after his recent re-inspection of the Liverpool, Ormskirk, and Preston Railway, and to inform you that for the reason therein contained they have postponed the opening of the line for public traffic for a further period of one month, but that they will remove this restriction as soon as they are satisfied that the traffic can be conducted without danger to the public.

I have, &c.,

The Secretary of the
East Lancashire Railway Company.H. D. HARNESSE,
Capt. Royal Engineers.

SIR,

March 30, 1849.

I HAVE the honour to inform you that I proceeded this day to the junction of the Liverpool, Ormskirk, and Preston Railway with the Liverpool and Bury Railway, with a view of ascertaining how far the arrangements of the two Companies for working the signals at the junction and the line from thence to Liverpool (the joint property of each) were consistent with the public safety. I was met at the junction by Mr. Hacking, Mr. Grundy, and Mr. Meek, on the part of the East Lancashire Company, and by Captain Laws and Mr. Hawkshaw, on the part of the Lancashire and Yorkshire Company.

The signals which were up and ready for working are three in number, placed on each line 400 yards from the junction, and worked from thence by means of wires. The junction is awkwardly situated, being on a curve, and in a cutting. The signals are, however, well placed, and can be seen several hundred yards off by approaching trains, and are also seen from the junction. Captain Laws produced a code of instructions for the signal-man, which, as far as the safe working of the line was concerned, was unobjectionable; but the East Lancashire Company took exception to it, inasmuch as by claiming precedence for the trains of the Lancashire and Yorkshire Company, it assumed a superiority of right in the joint line inconsistent with the perfect equality belonging to each. The East Lancashire Company proposed, instead, that in the case of the trains of each Company coming up at the same time, the signal-man was to decide which whistle was first heard, and to give that train the preference. This appeared to me to be a very objectionable plan to adopt, and as neither party were willing to yield a precedence necessary for the safe working of the line, and their claims being exactly balanced, the proper and only ground, under these circumstances, for deciding the question appeared to me to be the public convenience, based upon the greatest amount of passengers carried by either Company, to be decided at the end of six months by the Commissioners of Railways, the preference in the mean time to be conceded to the Lancashire and Yorkshire trains. I annex a copy of the regulations agreed to by both parties, and signed by them, with a memorandum that the claim of precedence is to be decided at the end of the six months by the Commissioners of Railways, on the above basis.

In conclusion, I would observe that the whole question appeared to be one of punctilio, and as it has been settled without compromising either party, and is not a matter of the slightest importance, I am of opinion that the question is not likely to be revived.

Mr. Hacking assured me that he would so arrange the trains of the East Lancashire line that an interval of at least one quarter of an hour should elapse between the trains of the two Companies passing the junction.

I consider the Liverpool, Ormskirk, and Preston line may now be opened with perfect safety to the public.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.GEORGE WYNNE,
Capt. Royal Engineers.*Lancashire and Yorkshire and East Lancashire Railways.*

Regulations respecting the Signals at Junction Walton-on-the-Hill of the Lancashire and Yorkshire and East Lancashire Railways.

1. There are three signal-posts, at points 400 yards distant from the junction, to be in the charge of the East Lancashire Company's pointsman there.
2. These signals must always be kept as stopping signals, and on the approach of any train, as soon as the pointsman hears the whistle, he must, if the line be clear, turn the signal. Unless this alteration be made, every train must stop at a distance of 100 yards from the point of junction.
3. The engine-driver of every train on the Lancashire and Yorkshire line, when within 800 yards of the junction, must give a long-continued whistle, to warn the pointsman of his approach, and reduce his speed.
4. The engine-driver of every East Lancashire train, when within 800 yards of the junction, must give a succession of short distinct whistles, and reduce his speed.
5. In case of trains on both lines approaching the point of junction at the same time, the trains on the Lancashire and Yorkshire line are to have the right of road, and the other trains must be stopped until such trains on the Lancashire and Yorkshire line have passed.
6. If the other trains have to follow the trains on the Lancashire and Yorkshire line, or *vice versa*, past the point of junction, an interval of five minutes must elapse previous to their being allowed to do so, and then great caution, and the general regulations as to distance, must be observed.
7. All luggage-trains must stop for passenger-trains.

Appendix No. 8.
—
East Lancashire.
Railway.
(Barton Branch.)

8. In foggy weather, as well as at dark, the lamps at the different signal-posts must always be kept lighted, and explosive signals and red port-fires ready, and used if required.

9. Every engine-driver, guard, stoker, and pointsman is required always to have about his person a copy of the rules and regulations and time-tables of all Companies' trains passing over the two lines, and to make himself perfectly acquainted with them; and he will be held responsible for any accident that may arise from ignorance of them.

10. Every guard, engine-driver, stoker, and pointsman must apply, not later than the last day but one of the month, at his Superintendent's office, for a time-table of both Companies for the ensuing month.

11. The strictest attention and obedience to the foregoing rules is required from all the guards, engine-drivers, stokers, and pointsmen of all Companies using the two lines, and others to whom they may relate, upon pain of instant dismissal; and any neglect of or inattention to these orders coming to the knowledge of any servant of either Company, must be immediately reported to the Superintendent, or the party not so reporting will subject himself to a like penalty.

Note.—Instruction 5 is to be in force for six months from the opening of the East Lancashire line, when the question of precedence is to be settled by the Railway Commissioners. The East Lancashire Company is to pay the signal-man at the point of junction.

*Office of Commissioners of Railways, Whitehall,
March 31, 1849.*

SIR,

THE Commissioners of Railways having received a report from Capt. Wynne, approving the arrangements made for working the signals on the junction of the Liverpool, Ormskirk, and Preston, and the Liverpool and Bury Railways, and upon the line from thence to Liverpool, I am to inform you that they have no longer any objection to the Liverpool, Ormskirk, and Preston line being opened for the purposes of public traffic.

I have, &c.,

*The Secretary of the
East Lancashire Railway Company.*

H. D. HARNES,
Capt. Royal Engineers.

SIR,

Bury, Lancashire, March 30, 1849.

IN compliance with the instructions contained in your communication of the 29th instant, I beg to enclose a Memorial under the seal of this Company, requesting the interference of the Commissioners with reference to the supervision of the portion of the Liverpool and Bury line entering Liverpool, and which portion is now the joint property of this Company and the Lancashire and Yorkshire Railway Company.

It is very desirable that the necessary regulations should be settled without delay, and the Directors hope the Commissioners will give this matter their immediate attention.

I have, &c.,

*Capt. Harness, R.E.,
&c.*

JAMES SMITHELLS,
Secretary.

To the Commissioners of Railways.

The Memorial of the East Lancashire Railway Company,

SHREWETH,

THAT it appears by "The Liverpool, Ormskirk, and Preston Railway Act, 1846," an Act was passed in the then last session of Parliament, intituled "The Liverpool and Bury Railway Act, 1845," in which Act was recited that a Company had been formed for the purpose of making a railway from Liverpool to Preston, with branches therefrom, under the name of "The Liverpool, Ormskirk, and Preston Railway Company" (being the Company incorporated by the first-named Act), and that the line of railway approaching the town of Liverpool and the station at Liverpool as defined on the plans of the said Company, were nearly identical with the line of railway and station at Liverpool by the said last-named Act authorized; and further, that an agreement had been entered into between the two Companies with reference thereto as therein mentioned. And the first-named Act recited that, by the said agreement, it was amongst other things declared and agreed that the line of the Liverpool and Bury Railway lying between the point of junction therewith of the railway by the first-named Act authorized, and the termination of the said Liverpool and Bury Railway, in the town of Liverpool, should be formed by the said two Companies on joint account, and that the station of and belonging to the said railway in the town of Liverpool, should be divided into two portions, one for each Company. And also it was recited in the first-named Act (amongst other things) that the said Liverpool and Bury Railway Company had proceeded to carry into effect the powers and provisions of the said Liverpool and Bury Railway Act for making and constructing the said railway and the said station with all requisite buildings and conveniences. It is by "The Liverpool, Ormskirk, and Preston Railway Act, 1846," amongst other things enacted, that the said Liverpool and Bury Railway Company should proceed to make, construct, and complete the portion of the said railway, and should also make, erect, and complete the said station, buildings, and conveniences, which station should be so made and constructed as to be divided into two separate and distinct parts, to be respectively appropriated to the said two Companies.

That it is by the said "Liverpool, Ormskirk, and Preston Railway Act, 1846" provided, that if either during the progress of the said works or after the completion thereof any difference should arise between the said Companies, either as to the principle or mode of construction, or arrangement of the said station, buildings, and conveniences, or as to the division, apportionment, and appropriation thereof to and between the said two Companies respectively, or as to any other matter or thing relating to the premises, every such difference or dispute should from time to time, as occasion might require, be referred, and be subject to the award and determination of the Lords of the Committee of Privy Council for Trade and Plantations, whose decision on all matters so from time to time referred to them should

be final and conclusive between the parties: Provided always, that if the said Lords of the Committee of Privy Council for Trade and Plantations should refuse or neglect to decide such difference or disputes when and as the same should from time to time arise, after a reasonable request should have been made to them for that purpose, then every such dispute with which the Lords of the Committee of Privy Council for Trade and Plantations should neglect or refuse to interfere, should and might be settled by arbitration in the manner provided by "The Railway Clauses Consolidation Act, 1845," with respect to the settlement of disputes by arbitration.

That the Liverpool and Bury Railway, authorized by "The Liverpool and Bury Act, 1845," is now open to the public, and the Liverpool, Ormskirk, and Preston Railway, authorized by "The Liverpool, Ormskirk, and Preston Railway Act, 1846," is now ready to be opened to the public for the purposes of traffic.

That we, the East Lancashire Railway Company (in whom are now vested the undertakings and all the rights, powers, and authorities of the Liverpool, Ormskirk, and Preston Railway Company), have submitted to the Lancashire and Yorkshire Railway Company (in whom are now vested the undertakings and all the rights, powers, and authorities of the Liverpool and Bury Railway Company), the Regulations for the use of the said two Companies, hereunto annexed, to which the said last named Company object, whereupon disputes and differences have arisen between us, the East Lancashire Railway Company and the Lancashire and Yorkshire Railway Company, touching the Regulations to be used by the said two Companies.

That your Memorialists have given notice to the Lancashire and Yorkshire Railway Company of their intention to apply to the Commissioners of Railways (in whom are now vested all the powers, rights, and authorities conferred on the Lords of the Committee of Her Majesty's Privy Council for Trade and Foreign Plantations under the said recited Act) to decide the said differences and disputes.

Your Memorialists therefore most respectfully apply to the Commissioners of Railways to decide the said differences and disputes touching the said Regulations, and to make an award and determination in the premises, under the provisions of "The Liverpool, Ormskirk, and Preston Railway Act, 1846."

Dated the twenty-seventh day of March, 1849.

Signed on behalf of the East Lancashire Railway Company,

JAMES SMITHELLS, *Secretary.*

REGULATIONS proposed by the East Lancashire Railway Company relating to the management and supervision of that portion of the Liverpool and Bury Railway executed on joint account for the Lancashire and Yorkshire and East Lancashire Railway Companies.

General Regulations.

1. There shall be a superintendent appointed by the Directors of the two Companies to supervise the working of the joint line and such of the sidings, platforms, turntables, cranes, hoists, warehouses, machinery, and conveniences as may be used in common.

2. The superintendent shall have such control over the servants of the two Companies as may be necessary for securing to each Company the free use of the line, stations, sidings, platforms, turntables, cranes, hoists, warehouses, machinery, and conveniences, and for preventing the servants of the two Companies from interfering with each other, or interrupting the general traffic of the railway.

3. All servants necessary for working the points and signals (except those at the junction of Walton-on-the-Hill, which are to be appointed by the East Lancashire Company) throughout the joint line and stations or any hoist, engine, machinery, or convenience of any kind jointly used by the two Companies, shall be under the control of the superintendent, who shall have authority to appoint, suspend, and dismiss such servants.

4. The wages of the superintendent shall be paid in equal proportions by the two Companies, and all servants appointed by him on joint account shall be paid by the two Companies in proportion to the traffic of each Company using the joint line and stations.

5. The superintendent shall be dismissed on the application of either Company, and his successors from time to time appointed by the Directors of the two Companies.

Special Regulations relating to the Junction of the two lines at Walton-on-the-Hill.

1. There are three signal-posts at Walton junction, one on the joint line, about 150 yards north of the tunnel; another on the Lancashire and Yorkshire line, 350 yards north-east of the point of junction; and a third on the East Lancashire line, 280 yards north of the point of junction.

2. The signals must always be kept as stopping, and on the approach of any train, as soon as the pointsman hears the whistle, he must, if the line be clear, lower the arm of the post relating to that particular line, half-way down by day, or change the light from red to green by night. Unless this alteration of the signal be made, every train must stop at a distance of 100 yards from the junction.

3. The engine-driver of every Lancashire and Yorkshire train, when within 800 yards of the junction, must give a long-continued whistle to warn the pointsman of his approach, and reduce his speed to 5 miles per hour.

4. The engine-driver of every East Lancashire train, when within 800 yards of the junction, must give a succession of short distinct whistles, and reduce his speed to 5 miles per hour.

5. In case of trains approaching on both lines at or near the same time, the road must be given to the train first giving the approach signal whistle.

6. If the East Lancashire trains have to follow the Lancashire and Yorkshire trains, or the Lancashire and Yorkshire trains have to follow the East Lancashire trains past the point of junction, an interval of five minutes must elapse previous to their being allowed to do so, and then great caution must be observed. All luggage-trains must give the road to passenger-trains.

7. Whenever a Lancashire and Yorkshire train has passed the junction going towards Liverpool, within eight minutes of the approach of the East Lancashire train, the pointsman must show a green hand-flag by day, or a green hand-lamp by night: the like applies to a Lancashire and Yorkshire train following an East Lancashire train, and thus, whenever the engine-driver or guard of any train observes that the pointsman has in his hand such green flag or green light, he will be aware that there is a train not more than eight minutes before him.

Appendix No. 8.
 East Lancashire
 Railway.
 (Barton Branch.)

8. In foggy weather the lamps at the different signal-posts must always be kept lighted, by the signal-man.

9. No engine or train must be allowed to pass the junction, except the regular passenger and goods trains, as specified in the time-bills, unless the pointsman shall have received due notice from the superintendent or some principal officer of one of the Companies.

10. Every engine-driver, guard, stoker, and pointsman must be required always to have about his person a copy of the Rules and Regulations and time-tables of both Companies, and to make himself perfectly acquainted with them; and the superintendent must see to this rule being strictly carried out.

11. Every guard, engine-driver, stoker, and pointsman must apply, not later than the last day but one of the month, to the Superintendent's office for a time-table of both Companies for the ensuing month.

12. The strictest attention and obedience to the foregoing rules must be enforced by the superintendent from all guards, engine-drivers, stokers, and pointsmen of both Companies and others to whom they may relate; and any neglect of or inattention to these orders coming to the knowledge of any servant of either Company, must be immediately reported to the superintendent.

The foregoing general and special regulations may from time to time be altered by mutual agreement between the two Companies, and in case either Company desire an alteration which shall be objected to by the other, then the matter in dispute will stand referred to the Railway Commissioners, under the 62nd section of "The Liverpool, Ormskirk, and Preston Railway Act, 1846."

Office of Commissioners of Railways, Whitehall,
 March 31, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways, in reference to your letter of the 30th instant, transmitting a Memorial relative to the supervision of the Liverpool and Bury Railway, where it enters Liverpool, to request either the secretary or engineer of the East Lancashire Railway Company to attend at this office, for the consideration of the matters contained in that Memorial, on any day between 11 and 1 o'clock, which may be found by previous communication with the Lancashire and Yorkshire Railway Company to be convenient to both the parties interested.

I have, &c.,

To the Secretary of the
 East Lancashire Railway Company.

H. D. HARNESS,
 Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
 March 31, 1849.

SIR,

THE Commissioners of Railways having received a Memorial from the East Lancashire Railway Company, relative to the supervision of the Liverpool and Bury Railway, where it enters the former town, I have been directed to require either the secretary or engineer of the Lancashire and Yorkshire Railway Company to attend at this office, in reference to that Memorial, any day between 11 and 1 o'clock, that may, by previous communication with the East Lancashire Railway Company, be found convenient to both parties.

I have, &c.,

To the Secretary of the
 Lancashire and Yorkshire Railway Company.

H. D. HARNESS,
 Capt. Royal Engineers.

SIR,

Bury, Lancashire, April 9, 1849.

REFERRING again to your letter of the 31st ult., respecting our Memorial as to the supervision of the joint line into Liverpool, I beg to say that we are now in communication with the Lancashire and Yorkshire Company on the subject, and it is now expected that the two Companies may be able to agree upon some of the regulations, and thus reduce the questions for the decision of the Commissioners to as small a number as possible. This done, I will then apprise you of the day on which the Companies will be prepared to attend the Commissioners for their decision on the disputed questions.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

JAMES SMITHELLS, Secretary.

Appendix No. 9.

Great Northern
 Railway.
 (Lincoln to Gainsborough.)

APPENDIX No. 9.

GREAT NORTHERN RAILWAY.—(Lincoln to Gainsborough).

SIR,

Whitehall, April 3, 1849.

I HAVE to report, for the information of the Commissioners, that on the 29th ult. I inspected a portion of the Great Northern Railway, extending from Lincoln to Gainsborough. At the latter place it joins the Manchester, Sheffield, and Lincolnshire Railway, about one mile from the town; its length between these points is 15 miles, 66 chains.

The line commences by a level crossing of the High-street of the city of Lincoln; the gates are made to shut across both the railway and the road, but are kept closed across the former; this arrangement may, perhaps, consult best the public convenience, but I draw attention to it as a deviation from the Act of Parliament. At 11 chains from the fixed point, the railway

crosses the Brayford mere by means of a swing-bridge, turning on a pivot in the centre, the two openings being 19 feet each. No signal-post has yet been fixed at this point; and until one is erected, and a man specially told off to the duty, I consider it would be attended with danger to open the line for passenger traffic. I found the platforms incomplete at the stations, but in a forward state; and about 200 yards of the up-line, close to the junction at Gainsborough, not yet laid; all the materials, however, were on the ground, and a few hours would be sufficient to complete it.

The following level crossings of public roads occur, for which I find no authority in the Act, viz., at

Miles.	Chains.	
143	11	Skillingthorpe to Saxilby.
148	64	Sturton to Marton.

Neither do I find any authority in the Act for the junction of this line with the Manchester, Sheffield, and Lincolnshire Railway, at Gainsborough.

Until proper signals are erected at the swing-bridge over Brayford mere, I am of opinion that the line cannot be opened with safety. I must therefore report that, from the incompleteness of the works, and of the establishments for working this portion of the Great Northern Railway, the opening of it would be attended with danger to the public using the same.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
April 3, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Capt. Wynne's Report of his inspection of the Great Northern Railway from Lincoln to Gainsborough, and to request you to call the attention of the Directors of the Company to his observations; and to forward to the Commissioners explanations upon the several points adverted to therein, and particularly to the deviation from the powers of the Act, in making unauthorized level crossings.

I am at the same time to acquaint you that the Commissioners consider it necessary to postpone the opening of the line above referred to, for the purposes of public traffic, for the period of one month from this date.

I have, &c.,

The Secretary of the
Great Northern Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

Company's Office, 14, Moorgate Street,
April 4, 1849.

SIR,

I HAVE to acknowledge the receipt of your letter of the 3rd, with a copy enclosed, of a Report, No. 997, of the same date, from Capt. Geo. Wynne, R.E., of his inspection of the line of this railway from Lincoln to Gainsborough, and calling, by desire of the Commissioners of Railways, for an explanation upon certain points adverted to in that Report, &c. In reply, I am instructed to state, first, with respect to the signal, for the want of which the swing-bridge across Brayford mere is considered dangerous, that instructions have been given for the immediate erection of a proper signal, and of which being in its place, with a person competent to work it, having been appointed to that duty, a certificate from the Company's engineer shall be forwarded in the course of to-morrow to Capt. Wynne direct; and I am to express the hope that in the event of that officer being thereby enabled to make a further report that he is satisfied of the safety of the bridge, the Commissioners may be induced to grant the necessary certificate to authorize the line being opened for public traffic on Monday next, 9th April, instant; and so prevent a great inconvenience and disappointment to the public, which would otherwise occur, it having been, in anticipation of authority to open the line, extensively advertised that the opening would take place on Monday next, the 9th.

Secondly, I am to explain that the road at 143 miles 11 chains was intended, as shown, on the Parliamentary plan, to be diverted and carried alongside the railway, and to cross on the level together with the turnpike-road near Saxilby. This has been altered, so as to let the road cross on the level at this point, instead of at Saxilby. The Parliamentary plan involved a level crossing of this road, and the only alteration is, the point at which this occurs.

Thirdly, with regard to the level crossing at Marton, 148 miles 64 chains, this is done for public convenience, and a clause stands in the Company's Deviation Bill of the present Session to authorize it.

Fourthly, as to the junction at Gainsborough with the Manchester, Sheffield, and Lincolnshire Railway, the two lines are authorized by the Acts of the respective Companies to cross each other on the level; and the junction is a mere curve, and one of those additional works which the general powers of the Company enable them to make, and for which they are empowered to purchase lands by the Railway Clauses Act, sec. 45; and it would be obviously inconvenient to the public that no junction should exist between these railways.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. R. MOWATT, Secretary.

Appendix No. 9.
Great Northern
Railway.
(Lincoln to Gainsborough.)

Appendix No. 9. SIR,

Great Northern
Railway.
(Lincoln to Gains-
borough.)

Whitehall, April 6, 1849.

I HAVE the honour to report, for the information of the Commissioners, that I have this day reinspected the Great Northern line from Lincoln to Gainsborough, and I find that a proper signal has been erected at the swing-bridge; that the platforms are completed, as also the parts of the permanent way that were unfinished at the time of my previous inspection.

I now consider the line may with safety be opened for passenger traffic.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
April 7, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you that, on considering the report made to them by Capt. Wynne, after his re-inspection of the Great Northern Railway between Lincoln and Gainsborough, they no longer object to that portion of the line being opened for public traffic.

I have, &c.,

The Secretary of the
Great Northern Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

Whitehall, April 11, 1849.

IN reply to your letter of the 4th instant, directing that I should re-visit the Great Northern Railway between Lincoln and Gainsborough, to ascertain whether proper arrangements had been made for working the signals at the swing-bridge, in the city of Lincoln; and also as to the correctness of the explanations of the Company with regard to the level crossing at 143 miles 11 chains; and of the curve at the junction with the Manchester, Sheffield, and Lincolnshire Railway.—

I have the honour to inform you, with regard to the level crossing, that no diversion of the road is shown on the Parliamentary plan, though it is stated on the section that it is to be diverted, and there is a section of the diversion given; the road in question crosses the railway, and then for a mile runs along the top of the embankment of the Foss Dyke, parallel to the railway. In the Parliamentary plan, the railway is marked to run along this embankment for the same distance which would have rendered it necessary to divert the road; but the line of the railway having been made to deviate about four chains further in, does away with the necessity, but causes two level crossings instead of one, and therefore the additional one must still be an unauthorized one.

With regard to the junction, I have only to remark that, in making it they have very nearly kept within the joint limits of deviation of the two lines. The question, however, appears to me to be one of legal construction, as to whether two lines which cross one another at right angles, and so render joint traffic impossible, have the power of making junctions with curves of less radius than 40 chains for the purposes of mutual traffic?

I have already reported on the subject of the signals at the swing-bridge.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 10.

Shrewsbury and
Birmingham
Railway.

APPENDIX No. 10.

SHREWSBURY AND BIRMINGHAM RAILWAY.

SIR,

Whitehall, May 7, 1849.

I HAVE to report, for the information of the Commissioners of Railways, that on the 2nd inst. I inspected the Shrewsbury and Birmingham Railway from Oaken Gates to the Wellington junction, a distance of 2 miles 45 chains. The works were generally complete, and the rails laid; but a bridge carrying a turnpike-road over the railway near the junction was so incomplete that the road traffic was, at the time of my inspection, still carried on as a level crossing, and no arrangements had been made upon the ground for the accommodation of the traffic at Oaken Gates, neither by the erection of platforms or the construction of approaches, the railway terminating on an embankment close to a bridge under the railway to which there was no parapet.

The junction rails at Wellington were not laid, but a few hours would complete them; but under the circumstances of the total want of a station at Oaken Gates, and the incomplete state of the bridge before mentioned, causing the road traffic to pass over the railway on the level, I am of opinion that the opening of this portion of the Shrewsbury and Birmingham Railway will, by reason of the incompleteness of the works, be attended with danger to the public using the same.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

*Shrewsbury and Birmingham Railway Office, 3, Moorgate-street,
London, May 14, 1849.*

Appendix No. 10.

Shrewsbury and
Birmingham
Railway.

SIR,

I HAVE to acknowledge receipt of your letters of the 7th instant, with copy of letter of same date from Captain Simmons.

I have since applied to our engineer for an explanation of the circumstances under which the radius of a curve near the town of Shrewsbury has been reduced from 15 chains to 11 chains, and I beg to enclose copy of letter from him in reply.

I regret that the incomplete state of the approaches to the bridge carrying the turnpike-road to Newport over the railway, and the absence of the temporary platform, approaches, and booking office at Oaken Gates, should have rendered a second inspection necessary, but I gave the notice on the assurance of the contractor, that the arrangements at Oaken Gates would be complete before the 15th instant, at which time we contemplated opening from Shrewsbury to Oaken Gates.

I am now informed that the platform, approaches, booking-office, turn-table, &c. at Oaken Gates are completed, and that the road leading to Newport, over the railway, has also been completed to the satisfaction of the turnpike-road trustees, who have certified to that effect.

I trust, therefore, it will be convenient to Captain Simmons to make the further inspection required sufficiently early to permit of our opening on the 1st of next month, on which day the Shropshire Union Company intend opening their line from Shrewsbury to Stafford.

I have, &c.,

GEORGE KNOX, *Secretary.*

*Capt. Harness, R.E.,
&c. &c.*

DEAR SIR,

28, Waterloo-street, Birmingham, May 12, 1849.

IN reference to Captain Harness's letter of the 7th inst., requesting some explanation of the circumstances under which the radius of a curve near the town of Shrewsbury has been reduced from 15 chains to 11 chains, I have to report that the alteration was occasioned by the position of the Shrewsbury station being changed after the passing of the Act, in consequence of the different Railway Companies (entering Shrewsbury) agreeing upon a general station, thereby rendering it necessary for each Company to make a slight alteration in their plans, in order to form one central junction of the different railways affording accommodation to the town of Shrewsbury.

I have, &c.,

WILLIAM BAKER.

*George Knox, Esq.,
&c. &c.*

A copy of this letter has been sent to Mr. Cowan, for the Commissioners.—W. B.

SIR,

Whitehall, May 23, 1849.

I HAVE to inform you, with reference to your letter of the 13th inst., in which I was directed to re-inspect the Shrewsbury and Birmingham Railway from the Wellington junction to Oaken Gates, that having been appointed to carry the instructions contained therein into effect, I was called upon by the engineer, who fully explained to me that the points alluded to in my Report of May 7, as being incomplete, had been now placed in a fit condition to allow the railway to be used with safety by the public. The junction had been completed; the turnpike-road, the bridge for which was in an incomplete condition at the time of my inspection, is now finished and the road traffic has been over it for nearly a month, and the temporary station is in a fit state for the accommodation of the public; and, in conclusion, I have to state that I am satisfied, from the explanation of the engineer, that it can now be opened with safety to the public.

I have, &c.,

J. L. A. SIMMONS,
Capt. Royal Engineers.

*Capt. Harness, R.E.,
&c. &c.*

APPENDIX No. 11.

Appendix No. 11.

LONDON, BRIGHTON, AND SOUTH COAST RAILWAY.

London, Brighton,
and South Coast
Railway.

SIR,

April 10, 1849.

I HAVE to report, for the information of the Commissioners, that I yesterday inspected the Hailsham and Eastbourne Railway of the London, Brighton, and South Coast Company, which consists of two branches starting from the Polegate station of the Lewes and Hastings line: the one to Hailsham takes a northerly direction, and extends 2 miles 7 furlongs 50 yards; and the other, going south, is 4 miles 3 furlongs 70 yards in length.

The Hailsham branch starts from the main line in the direction of the down traffic with a curve of 10 chains radius; the Parliamentary plan shows the curve in the other direction, and

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Appendix No. 11. the limits as respects land have in a very slight degree been exceeded in making the change; the steepest gradients are—
 London, Brighton, and South Coast Railway.

1 in 98, 70 chains in length.
 1 in 109, 50 "
 1 in 165, 15 "

The remaining gradients are all easy. The deepest cutting is 19 feet, and the highest embankment 15 feet. The formation through which this branch passes is clay of an unfavourable character; and the slopes, which are made at an inclination of 2 to 1, do not stand very well.

There is one over-bridge for a parish road, and one under-bridge for a public footpath.

There are four public level crossings which have gates shutting across both the road and railway, and are provided with lodges for the gate-keepers. One other public level crossing, being a cattle-drove, and occurring in a cutting, is not yet completed, but is in progress. These crossings are all sanctioned by the Act.

The branch terminates on a common, close to the village of Hailsham, which probably does not contain a population of more than 1,600; the neighbourhood, however, is stated to be populous, and some amount of cattle traffic is looked for, as well as supplying the district with coal.

The Eastbourne branch starts from the Polegate station, on the south side of the line, with a curve of 56 chains radius, and in the direction of the down traffic; the gradients, with one exception of 1 in 105, 34 chains long, are extremely easy, the line being for the most part nearly a surface one. The only bridges which occur are over three drains; they are from 12 to 14 feet span, the abutments are on piles carrying single horizontal balks for the 12 feet openings, and double balks for the 14 feet openings.

Both branches have the permanent way laid single, but the formation level is sufficiently wide for a double line; the ballasting is of chalk; the rails are chiefly of the bridge form laid on cross sleepers; they weigh 31 lbs. to the yard. The reason given to me for using this description of rail was, that they were taken from another part of the Company's line where a stronger description of rail had been substituted, and they were considered sufficiently strong for the traffic likely to be developed on these branches. Eastbourne is coming much into request as a watering-place, and houses are rapidly being built; and it is probable that in the season the south branch will command a large passenger traffic.

No additional signal for working the junction of the two branches with the main line have yet been erected. Mr. Hood, the engineer, proposes putting up distance signals (to be worked by wires from the Polegate station) on the two branches; but as he is not prepared to put them up immediately, I would recommend the opening of the line to be postponed until they are erected, as I do not consider the line would be safe for the public using the same without them.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

GEORGE WYNNE,
 Capt. Royal Engineers.

SIR,

Whitehall, May 10, 1849.

I HAVE to report, for the information of the Commissioners, that I yesterday re-inspected the Hailsham and Eastbourne branches of the London, Brighton, and South Coast Railway, and have now to report that at the Polegate station, where both branches join the Hastings line, two conspicuous signals have been erected on each branch, which are worked by means of wires from the Polegate station; and also that a level crossing on the Hailsham branch, which was incomplete at the time of my former inspection, is now finished. I consider both lines may now be safely opened for the conveyance of passengers.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

GEORGE WYNNE,
 Capt. Royal Engineers.

Appendix No. 12.

Manchester,
 Buxton, Matlock,
 and Midlands
 Junction.
 (Ambergate to
 Rowsley).

APPENDIX No. 12.

MANCHESTER, BUXTON, MATLOCK, AND MIDLANDS JUNCTION.— (Ambergate to Rowsley.)

Office of Commissioners of Railways, Whitehall,
 May 29, 1849.

SIR,

I HAVE the honour to report to you, for the information of the Commissioners, that I yesterday inspected a portion of the Manchester, Buxton, Matlock, and Midlands Junction Railway, extending from the Junction with the lines of the Midland Company, at the Ambergate station, to Rowsley, a distance of 11 miles 4 furlongs and 4 chains.

This portion of the line ascends the valley of the Derwent from Ambergate to within a couple of miles of Chatsworth. The valley is in many places very narrow, and confined by high and rocky hills. In order to carry a railway through such a country, it has been found necessary to follow, as far as practicable, the various windings of the river. The gradients thus obtained are generally very favourable; but the necessity of bending the line to suit the varied natures of the ground, has rendered indispensable the employment of a number of sharp

curves. The line, in general, has been constructed in very near accordance with the Parliamentary plans and sections. There are, however, a few instances in which the authorized limits of deviation have been overpassed; they occur principally among the curves:—

1. At 37½ chains from Ambergate, a curve of 30 chains radius has been substituted for one of 40 chains radius, for a distance of 14½ chains.
2. At 1 mile and 78 chains, a curve of 25 chains radius, and 12 chains in length, has been substituted for a curve of 30 chains.
3. At 2 miles and 11 chains, a curve of 23 chains radius, and 9 chains in length, has been substituted for a curve of 30 chains.
4. At 2 miles and 27 chains, a curve of 30 chains radius, and 11 chains in length, has been substituted for a straight line.
5. At 2 miles and 52 chains, a curve of 30 chains radius, and 21 chains in length, has been substituted for a curve of 40 chains radius.

In the gradients there is but one deviation which oversteps the authorized limits; it occurs at 9 miles and 9 chains from Ambergate, where a gradient 36½ chains in length, descending 1 in 4,718, has been broken up into a gradient 14½ chains in length, descending 1 in 466; and a gradient 22 chains in length, ascending 1 in 433; the object of the alteration being to save embankment by adhering more closely to the natural levels of the ground. The steepest of these—namely, that of 1 in 433, is still such a gentle ascent that the deviation is of but little importance.

I am of opinion that none of these deviations affect materially the efficiency of the line. In lines passing through level countries, where the direction is generally nearly straight, the insertion of five sharp curves might be a serious drawback, but in the present instance so many very sharp curves are necessary, and have been authorized, that the adding a few to the number cannot be of so much importance, particularly as the insertion of these has enabled the engineer to give a wider sweep to many of the others, so that, upon the whole, the line as constructed is perhaps as favourable as that shown upon the Parliamentary plan.

The cuttings, as may be anticipated from the nature of the country, are very heavy. Along the first 5 miles the strata cut through consist of clays, gravel, and shale, intermixed with rubble-stone. For the next 3½ miles, the line traverses a lime-stone country—the stone lying sometimes in broken masses, but more generally in very thick and compact beds. The remainder of this portion passes through a formation of gravel and shale. The rock-cuttings are heavy, some being from 45 to 50 feet in depth. The whole of these, as well as the embankments, are in a very complete state.

There are 14 bridges for roads passing under the railway;—nine of them consist of single arches of brickwork, in barrow-mortar, with cut stone quoins—all very carefully built; the remaining five consist of single openings, over which the rails are carried by cast-iron girders—two girders to each rail, with a timber beam between. The whole of these are of ample strength. There are eight bridges for roads passing over the railway;—four of them are single arches in ashlar, set in barrow-mortar; the remaining four also single arches are of brickwork, in barrow-mortar, with cut stone quoins. The whole of these arches, both under and over the railway, are of the segmental form; and the materials and workmanship appear to be of the very best description.

There are seven viaducts:—three consist of arches in brickwork, set in barrow-mortar, with cut stone quoins—all very carefully executed: the remaining four are viaducts of a peculiar and interesting construction; the roadway, borne by cast-iron girders, two of which, of great strength, are apportioned to each rail, being supported by cast-iron columns, resting upon the heads of hollow cylindrical piles of the same material, driven to an average depth of 14 feet, through very compact shale. The use of cast-iron piles for a foundation to the superstructure forms the principal feature of interest in these viaducts. A hammer weighing 30 cwt. was employed to drive them, but instead of the considerable fall that may be adopted in driving wooden piles, it was found necessary with these to confine the fall to 2½ feet. On increasing that fall to 3 feet, it was found that the sudden concussion was more than the cast-iron could bear. The structures possess great strength; the passage of a heavy engine producing no sensible deflection, and even no perceptible vibration. I am not aware that the employment of cast-iron as a foundation in *fresh* water is liable to any objection, and I therefore see no reason to doubt the perfect security of these works. The engineer to the line has promised to send me tracings showing the details of construction of these viaducts, and as soon as I receive them I shall have the honour of laying them before you.

There are 30 level crossings, two only of which are for public roads; these latter are provided with gates closing across both rail and road, and a gate-keeper has been appointed to each.

There are six tunnels; the longest of which is 761 yards in length. They are generally driven through sound and dry shale, gritstone, or hard and compact beds of limestone. Through the latter material the tunnels require no casing; wherever they pass through shale or gritstone they have been cased with side-walls of ashlar, or blocking-course in barrow-mortar, with arches of brickwork in the same mortar, or in cement. The whole appear to have been very carefully executed, and I consider them all perfectly safe.

The Cromford Canal is carried over this line by means of a cast-iron trough, 11 feet wide and 5 feet 4 inches deep, resting upon stone abutments; the towing-path is borne by cast-iron girders. The Lea branch of the same canal is also carried over the line by a cast-iron trough, 8 feet 6 inches wide and 5 feet 4 inches deep, resting upon stone abutments, with brick arches for the towing-paths. I consider both these perfectly secure.

The stations are five in number, viz.:—

Appendix No. 12.

Manchester,
Buxton, Matlock,
and Midland
Junction.
(Ambergate to
Rowsley.)

Appendix No. 12.

Manchester,
Buxton, Matlock,
and Midland
Junction.
(Ambergate to
Rowsley.)

1. The Ambergate station, at the junction with the Midlands line.
2. The Matlock Bath station, 5 miles and 58 chains from Ambergate.
3. The Matlock Bridge station, 7 miles from Ambergate.
4. The Darley Dale station, at 9 miles and 8 chains.
5. The Rowsley temporary terminus, at 11 miles and 44 chains.

At all these stations semaphore signals are placed; and to some, near which the approach is by a sharp curve or a tunnel, distant signals have been added, which may be worked from the platforms by means of wires.

The rail adopted on this line is of the  form, in 15 feet lengths, weighing 80 lbs. to

the yard. The chairs are of the ordinary construction, fixed with wooden trenails, and keyed with wooden keys. The permanent-way, generally, is in very fair order. There are two 36 feet turn-tables—one at either end of the line.

In working the railway, it is not intended to run any passenger-trains from it into the Midlands, or *vice versa*. The trains of this new line will run to and from Ambergate only; and the passengers will have to change into the carriages of the Midland Company.

The Midland Company are to furnish engine-power and carriages. For the working, in other respects, the Company have engaged the following servants:—

For the Matlock Bath station . . .	A clerk and one porter.
„ Matlock Bridge station . . .	A clerk and one porter.
„ Darley station . . .	A clerk.
„ Rowsley terminus . . .	A clerk and two porters.
At the public level crossings . . .	A gate-man to each.
Lastly . . .	Two guards.

As all the servants connected with the locomotive and carriage departments, and all those who go with the trains, are to be furnished by the Midlands Company, I have no reason to believe the above staff of servants insufficient for the safe working of this line.

I would recommend that permission be given to the Company to open on the day they propose, namely—on the 1st of June.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Appendix No. 13.

Caledonian
Railway.
(Clydesdale Branch,
&c.)

APPENDIX No. 13.

CALEDONIAN RAILWAY.—(Clydesdale Branch, &c.)

Stafford, May 1, 1849.

SIR,

I HAVE to report that, in compliance with the appointment of the Commissioners of Railways, I yesterday inspected the Clydesdale Branch of the Caledonian Railway from its junction with the Wishaw and Coltness Railway at Motherwell to the Polloc and Govan Railway, which I found in such a state as to permit of its being opened with safety to the public. One timber bridge over the railway was not quite completed, but the work remaining to be done upon it, if carried on carefully, will not interfere with the traffic on the railway. On the short portion of the Polloc and Govan Railway over which the Caledonian Railway Company propose to run their trains, there is a level crossing of a mineral railway, the property of the former proprietor of the Polloc and Govan Railway, who sold it to the Caledonian Company, reserving to himself the right of maintaining this level crossing. This is an objectionable arrangement, and might apparently have been avoided by the construction of a bridge, but no plans and sections of this portion of the railway having been deposited with the Railway Department at the time when the Act was obtained under which the Caledonian Railway Company work over this line, I am unable to say whether this level crossing has been sanctioned by Parliament. The mineral line crosses at an inclination of 1 in 60. I should, therefore, recommend that the stop which has been placed on the upper side of the crossing to prevent any vehicle from running across the Clydesdale Branch, should be kept always closed, unless raised to allow of the passage of waggons, so that if any waggon should break loose by accident, it would not run across the railway. From the Polloc and Govan Railway, a branch has been constructed to connect it with the Glasgow and Greenock Railway, and also another to a temporary terminus, called the Gushet Fauld Branch. This latter branch is in a fit state to be opened, but the connexion of the former with the Glasgow and Greenock Railway is not completed, and until this is properly done, I consider that it cannot be opened with safety to the public.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
May 2, 1849.

Appendix No. 13.

SIR,

I HAVE been directed, by the Commissioners of Railways, to inform you that, on considering the report made to them by Captain Simmons (of which the enclosed is a copy), after inspecting the Clydesdale Branch of the Caledonian Railway from its junction with the Wishaw and Coltness Railway at Motherwell to the Polloc and Govan Railway—the branch from the Polloc and Govan Railway to a temporary terminus, called the Gushet Fauld Branch—and the branch connecting the Polloc and Govan Railway with the Glasgow and Greenock Railway, that they do not object to the two former portions of railway being opened for traffic, but that with respect to the branch to the Glasgow and Greenock Railway, they have postponed the opening for one month, for the reason given in Captain Simmons' Report; they will, however, be ready to remove this restriction as soon as their inspecting officer is able to report that the opening will not be attended with any danger to the public.

I am to request you to call the particular attention of the Directors of the Company to Captain Simmons' observations respecting the level crossing of a mineral railway, by the portion of the Polloc and Govan Railway, over which the Caledonian Railway Company propose to run their trains.

I have, &c.,

H. D. HARNESS.

Capt. Royal Engineers.

Secretary of the

Caledonian Railway Company, &c.

Caledonian
Railway.
(Clydesdale Branch,
&c.)

Company's Offices, 125, George-street, Edinburgh,
May 19, 1849.

SIR,

I BEG leave to trouble you with the accompanying Memorial to the Commissioners of Railways, on behalf of the General Terminus and Glasgow Harbour Railway Company, and the Caledonian Railway Company, and with two relative tracings, and copy of correspondence, in reference to a difference which has arisen between these Companies and the representatives of the joint line between Glasgow and Paisley, as to the mode of effecting the junction between the General Terminus Branch of the Clydesdale Junction Railway and the Glasgow and Paisley Joint Line. It will be obliging if you will have the Memorial submitted, and the question in dispute decided upon with as little delay as possible.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. W. CODDINGTON, Secretary.

MEMORIAL of the General Terminus and Glasgow Harbour Railway Company and the Caledonian Railway Company.

To the Honourable the Commissioners of Railways.

HUMBLY SHEWETH,

THAT the General Terminus and Glasgow Harbour Railway Company have power, *inter alia*, by their Act, 10th and 11th Victoria, chap. 5, sec. 7, to make a branch railway to and from the Joint Line of the Glasgow, Paisley, and Grenock, and the Glasgow, Paisley, Kilmarnock, and Ayr Railways, at a point near Shields Bridge: the Caledonian Company had likewise power to make a branch, passing nearly over the same ground, to join the said railway at or near the same point.

By agreement between the Caledonian and General Terminus and Glasgow Harbour Railway Company, the branch shown on the plans of the Terminus Company was that which was ultimately adopted, and has been made, and this branch now forms an integral portion of the main line leading from Grenock and the west of Scotland, to the north of Scotland, to Edinburgh, to the south of Scotland, and to all parts of England.

A difference of opinion has arisen between the General Terminus and Glasgow Harbour Railway Company and the Caledonian Railway Company on the one part, and the representatives of the joint line of railway above referred to on the other part, as to the proper mode in which the openings in the ledges or flanges of the rails of the Joint Line Railway should be made for the purpose of effecting the junction or communication authorized as above in the manner most conducive to public safety.

The portion of line nearest to the Joint Railway, which is a continuation of the Clydesdale Railway, was inspected on the 30th April last, by order of your Honourable Board, and found to be complete and ready for the safe conveyance of passengers, with the exception of the point of junction hereinbefore specified, in consequence of which the opening has been postponed by your order.

The General Terminus and Glasgow Harbour and Caledonian Railway Companies seek to effect the communication by direct junction of both lines of rail in the ordinary manner, as is to be found upon all the railways in the kingdom, as is also to be found upon the Joint Line of the Glasgow, Paisley, and Ayr, and Glasgow, Paisley, and Grenock Railways at Paisley; as is also to be found where the Ardrossan Railway leaves the Glasgow, Paisley, and Ayr; also where the Ayr and the Kilmarnock branches of the same line separate; also in the same manner as the Glasgow, Paisley, and Ayr Company effected their own junction with the Caledonian line at Gretna last year.

This they do in the confidence that this mode (so universally adopted) is the safest for the public in addition to its recommendation of superior convenience in working.

The representatives of the Joint Line of the Glasgow, Paisley, and Grenock, and the Glasgow, Paisley, Kilmarnock and Ayr Railways have refused to permit this communication to be made, notwithstanding the approval of their own engineer. And as your Honourable Commissioners have refused your sanction to the full opening of the Clydesdale Railway until it is made, and that, in consequence, your petitioners are suffering great loss and damage, after the expenditure of upwards of half a million of money.

Appendix No. 13.
Caledonian
Railway.
(Clydesdale Branch,
&c.)

Your petitioners pray that, in accordance with the provisions of the Act, 5th and 6th Victoria, chap. 45, your Honourable Board will be pleased to direct, at your earliest convenience, what shall be the manner in which the communication shall be effected, and what the arrangements to be made for the safe working of the railways at the point of junction.

A tracing, showing the mode in which your petitioners propose to effect the junction before referred to, and one showing what is proposed by the Glasgow and Paisley Joint Line, together with a copy of the correspondence which has taken place on the subject, are herewith sent and referred to.

18th May, 1849.

J. W. CODDINGTON,
Secretary to the Caledonian Railway.

CHAS. ALEX. KING.,
Secretary to the General Terminus Glasgow Harbour Railway.

SIR,

Glasgow, May 30, 1849.

I HAVE this day inspected the branch made to connect the Polloc and Govan Railway with the Glasgow and Greenock Railway, and I have to report, that the connexion between the two still remains incomplete, as reported by Captain Simmons in his letter of the 1st instant. I have therefore to state, that from this circumstance it cannot with safety be opened to the public using the same, by reason of the incompleteness of the permanent way.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEO. WYNNE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
May 31, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you, that they have considered the statements made to them with respect to the proposed junction of the General Terminus Branch of the Clydesdale Junction Railway with the Glasgow and Paisley Joint Lines; and that as it appears that all parties agree to a direct junction for the down-traffic, as the engineers of both Companies agree in approving a direct junction for the up-traffic; and as Mr. M'Donald, who attended at this office to state the objections of the proprietors of the Joint Line to this arrangement admits, that it should be adopted wherever the Caledonian trains run through, the Commissioners consider that the required connexion should be made by a direct junction of the up and down lines of the General Terminus Branch Railway, with the up and down lines respectively of the Glasgow and Paisley Joint Lines.

The Commissioners are informed that this is the only point on which their decision is required.

I have, &c.,

The Secretary to the
Caledonian, Glasgow, and Paisley Joint Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

London, June 5, 1849.

I HAVE to report, for the information of the Commissioners, that I this day inspected the junction of the Caledonian Railway with the Glasgow and Paisley Joint Line; the junction is put in as a direct one, having a facing point on the arrival line of the joint railway; the work was not quite completed at the time of my inspection, but was so far advanced, and had such a force of plate-layers employed on it, as would ensure its being finished in a few hours. I have, therefore, no hesitation in reporting that the line may now be safely opened for the conveyance of passengers.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEO. WYNNE,
Capt. Royal Engineers.

Appendix No. 14.

Newry,
Warrenpoint, and
Rostrevor Railway.

APPENDIX No. 14.

NEWRY, WARRENPOINT, AND ROSTREVOR RAILWAY.

SIR,

Dublin, May 22, 1849.

I HAVE to report, for the information of the Commissioners, that, on the 21st inst., I inspected the Newry, Rostrevor, and Warrenpoint Railway. The line which commences just outside the town of Newry is 5 miles 62 chains in length: it extends to the small sea-port and bathing-place called Warrenpoint. The Newry terminus is close to the river; the railway then runs for 1½ miles through marshes, embanked from the river, after which its course until within one mile of Warrenpoint is through the slob land of the river, which the tide covers at high water; the railway at this part is on an embankment, the average height of which is about 10 feet, the side of the slope exposed to the action of the tides is paved, the slopes are at an inclination of 2 to 1, and stand well.

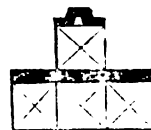
The line, as laid down on the Parliamentary plan, is nearly straight for more than half its length, and from thence to the end the curves are of an easy character; but, in consequence

(as the engineer stated to me) of the Admiralty requiring them to run the line as near as possible to the northern limits of deviation, a number of curves have necessarily been introduced; in two instances the Parliamentary limits for the curves have been exceeded; they occur at 3 miles 70 chains: the first is a curve of 35 chains radius, which joins one of 25 chains radius in a reverse direction; their total length does not exceed 36 chains. The line in its entire length is exposed to the view of the road, and, in some parts, approaches to within a few yards of it.

Appendix No. 14.
Newry,
Warrenpoint, and
Rostrevor Railway.

There is but one bridge on the railway, which is an under occupation one of 12 feet span, which is crossed by whole balks supported on stone abutments.

There are four timber viaducts, which are across openings left for the tidal water: their lengths vary from 7 to 50 yards, the piers and abutments are piles; the bays are 10 feet wide, except in one instance, where there is a 20 feet opening, which is spanned by three whole timbers placed as in the margin. Under each rail, 4-inch planking intervening between the balks, the 10 feet openings are crossed by single balks.



There is but one public level crossing and that leads to the ferry; the gates hut across the road. No accommodation is as yet provided for a gate-keeper, but a temporary box, I am informed, will be put up: the crossing occurs at 4 miles 40 chains; the occupation crossings, particularly through the marshes, are numerous.

The fencing of the railway is formed with ditches having a mound of earth towards the railway; this is the description of fence used on the Drogheda and Dundalk line, and it appears to be sufficient. There is a part of the line, about a mile from Warrenpoint, where the soil is of such a friable nature that the mound will not stand; and as the land is pasture and arable on each side of the railway, I consider a more permanent system of fencing should be adopted: the engineer has engaged to erect stone walls. The occupation-gates through the marsh lands should have post-and-rail fences on each side of them, as the mounds at the sides are liable to be thrown down by cattle; this the engineer has likewise promised to do.

There is no turn-table at either end; the engine must, therefore, travel tender foremost in one direction, which is objectionable; and when the engine is so placed, caution with a moderate speed should be observed.

The permanent way is laid single throughout; the formation level, however, is of sufficient width to carry a double line; the rail is of the bridge form, and weighs 80 lbs. per yard: they are laid upon longitudinal timbers of an average scantling of $12\frac{1}{2} \times 6\frac{1}{2}$ inches, and these rest on cross sleepers, placed at 10 feet intervals, to which they are secured by iron knees and spikes.



The chairs are flat iron plates, weighing 4 lbs.; the rail is secured to the longitudinal by $\frac{3}{4}$ -inch bolts, secured below by a fanged nut: the rails are made with a slope on the top to meet the coning of the wheels.

I consider the line may with safety be opened for the conveyance of passengers, and recommend that the usual certificate be granted.

On the next occasion of an inspecting officer visiting the neighbourhood of this railway, it might be desirable that he should see that the Company have fulfilled their promise with regard to the fencing.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

I annex a statement of the working stock; it is on a small scale, but sufficient, in my opinion, for the traffic the line is likely to have at the commencement; it is proposed that one engine should do the work each way.

G. W.

Newry, Warrenpoint, and Rostrevor Railway Company.—Newry, May 21, 1849.

List of Stock.

- 3 Engines and tenders.
- 3 First-class carriages.
- 5 Second-class carriages.

List of Officers and Persons employed upon the Line, viz.:

- | | |
|------------------------------|-------------------|
| 1 Secretary. | 2 Night watchmen. |
| 1 General Superintendent. | 1 Gatekeeper. |
| 1 Locomotive Superintendent. | 1 Engineman. |
| 3 Clerks. | 1 Fireman. |
| 3 Perambulating policemen. | 1 Guard. |
| 2 Switch and signalmen. | 1 Breaksman. |
| 4 Station porters. | |

In addition to the engineman and fireman, there will be one or two mechanics, who will be competent drivers, in case an additional one should be required.

No trains will run, at present, after dark; but all necessary lamps will be provided as the season advances.

JAMES BIGDEN, Secretary.

Appendix No. 14.

Newry, Warren-
point, and
Rostrevor Railway.

SIR,

Office of Commissioners of Railways,
May 24, 1849.

I HAVE been directed by the Commissioners of Railways to inform you that, on considering the report made to them by Captain Wynne, after his inspection of the Newry, Rostrevor, and Warrenpoint Railway, they do not object to its being opened for public traffic at the time proposed by the Company; but they hope that no time will be lost in providing proper accommodation for the person who, in compliance with the provisions of the Railway Clauses Consolidation Act, is to be intrusted with the care of the gates on the level crossing on the line; in erecting efficient fences on the parts of the line alluded to in the annexed extract from Captain Wynne's Report; and in fixing turn-tables at the extremities of the line, that it may not be necessary for the engines to travel tender foremost, and that great caution will be used in the interim with engines travelling in that position.

I am also to inform you, that the first officer of this department, who may be in the neighbourhood of the line, will be requested to re-inspect it and report upon these subjects.

I have, &c.,

*The Secretary of the
Newry, Warrenpoint, and Rostrevor Railway Companies.*

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

Whitehall, September 5, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that after I had inspected the Navan Branch of the Belfast Junction Railway Company, I proceeded to Newry for the purpose of ascertaining whether the directions of the Commissioners had been attended to on the Newry, Warrenpoint, and Rostrevor Railway, with regard to putting in turn-tables and properly completing the fencing of the line; I found that in the latter particular everything had been finished off in the most efficient manner; but with respect to the turn-tables, nothing has as yet been done.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 15.

Reading, Guildford,
and Reigate
Railway.

APPENDIX No. 15.

READING, GUILDFORD, AND REIGATE RAILWAY.

Office of Commissioners of Railways, Whitehall,
June 1, 1849.

SIR,

I HAVE the honour to report to you, for the information of the Commissioners, that I yesterday inspected a portion of the Reading, Guildford, Dorking and Reigate Railway, extending from the junction with the lines of the South Eastern Company at Reigate to the town of Dorking; the second portion, for which the Company had also given notice of opening, I was unable to inspect, as the engineer to the line informed me that, the works not being ready, no preparations had been made to enable me to pass along the line.

On the portion I was able to inspect, I found the station arrangements incomplete, with no platforms and no signals; and being therefore of opinion that the opening of both portions for which the Company have given notice must be postponed, because "their opening would be attended with danger to the public, by reason of the incompleteness of the works," I have not thought it necessary in this Report to enter into any further details.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
June 1, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Captain Laffan's Report of his inspection of the Reading, Guildford, and Reigate Railway, from the junction with the South Eastern Railway to the town of Dorking; and to inform you that, for the reasons therein stated, they consider it necessary to postpone the opening of the line in question for the purposes of public traffic for one month from this date.

I am at the same time to request that you will furnish the Commissioners with some explanation of the reasons why notice was given to inspect the line when it was not in a sufficiently advanced state to justify such notice being given.

I have, &c.,

*To the Secretary of the
Reading, Guildford, and Reigate Railway Company.*

H. D. HARNESS,
Capt. Royal Engineers.

*Reading, Guildford, and Reigate Railway,**2, Royal Exchange Buildings, London, June 6, 1849.*

GENTLEMEN,

I AM instructed by the Directors of this Company to acknowledge your communication of the 1st instant, conveying a copy of Captain Laffan's report on the inspection of a portion of our line of railway, and to express their regret at its result.

I am to inform you, by way of explanation, as requested, that at the time the notice for opening the line was sent in to you, the construction of the platforms was ordered, as were also the signals, and the Board had no reason to doubt that they would have been ready at the time appointed.

Finding at the last moment that some delay in completing these works was unavoidable, our engineer was requested on the 29th ult. to communicate with Captain Laffan for the purpose of postponing the inspection for a few days. It seems, however, that some mistake has been made, for which the Board of Directors beg to offer their apology; at the same time, I am to express their hope that as the main works of the line have been for some time completed, and as they are pushing forward the stations, the Commissioners will be disposed so far to relax their decision as to allow of an earlier opening, provided their inspecting engineer is satisfied with the state of the works within the month.

*The Secretary to the
Railway Commissioners.*

I have, &c.,

T. H. BAYLY, *Secretary.*

Appendix No. 15.

Reading, Guildford,
and Reigate
Railway.

SIR,

Whitehall, June 22, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that, in compliance with their appointment, I yesterday inspected the Reading, Guildford, and Reigate Railway from Redhill to Dorking, a distance of 7 miles, the opening of which had been postponed by the Commissioners, having been reported by Captain Laffan on the 1st instant incomplete in station arrangements, and as having no signals. I have now to report that it has been completed in these respects, and that I consider it in every way ready to be opened for the conveyance of the public.

I have, &c.,

*Captain Harness, R.E.,
&c. &c.*

J. L. A. SIMMONS,
Capt. Royal Engineers.

APPENDIX No. 16.

READING, GUILDFORD, AND REIGATE RAILWAY.—(*Reading and Farnborough.*)

Appendix No. 16.

Reading, Guildford,
and Reigate
Railway.
(*Reading and
Farnborough.*)

SIR,

Whitehall, June 29, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that in compliance with their appointment of the 27th inst., I yesterday inspected the Reading, Guildford, and Reigate Railway, from Reading to the junction with the London and South-Western Railway near Farnborough, a distance of 16 miles. I found the line generally in a very good state, and the bridges and viaducts well constructed and of ample dimensions to insure safety. One embankment near Reading, where it joins the bridge over the River Kennet, requires to be slightly widened, and there is a deficiency of ballast at the ends of the sleepers in some places in the cuttings, and I recommended that a wire signal should be placed on the Reading side of the Wokingham station, in consequence of a curve in the railway and a bridge over it, which intercept the view of the present signal. When these trifling matters shall have been attended to, I have to report that I am aware of nothing affecting the safety of the public to prevent the opening of this railway as desired by the South-Eastern Railway Company, who are to work it.

The junction of this line with the London and South-Western Railway, is effected by a single junction into the up-line without meeting points. At present the Company do not propose to run through trains, but that the passengers should change their carriages in proceeding to London, the South-Western Company having agreed to stop their trains at a platform erected for the purpose of the interchange. Whenever a through traffic is established, a signal will become necessary for the South-Eastern trains coming up the junction, and a signal ought now to be erected by the South-Western Company for the protection of the trains which may stop at the junction from other engines moving along their line.

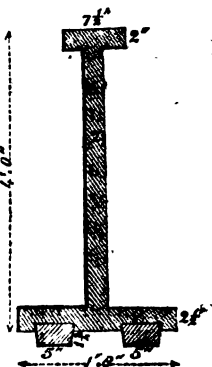
I ought not to conclude this report without noticing some bridges of a peculiar construction, which are the first of the description as yet erected for the passage of railway trains. The span of the largest is 56 feet, being for the purpose of carrying the railway over the Reading and London turnpike-road. The piers are of brickwork, and intervening space is spanned by cast-iron girders of the ordinary form into the under side of which two straps of wrought-iron, together 17½ inches in area, are inserted in a dove-tailed groove, having dove-tailed ends and irregular sides to prevent them from sliding over the cast iron. These straps are placed in the mould, which is heated to a high temperature and the cast-iron then run into it, by which means the two metals are intimately united.

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Appendix No. 16.
Reading, Guildford,
and Reigate
Railway.
(Reading and
Farnborough.)

The girders are each in three pieces, bolted together through flanges at their ends and secured at the bottom by wrought-iron straps, keyed to projections on the bars in the bottom of the beams.

They were submitted to a test of 40 tons, placed on the centre, with a clear interval between the bearings of 60 feet, under which the deflection was stated to be $1\frac{1}{4}$ inch. With an engine and tender, weighing about 20 tons, I found the deflection to be from 1-8th to 3-16ths of an inch. The connexion of the metals in the bottom appears good and very close, and so constructed as to secure the wrought-iron as an effectual tie to counterbalance the resistance to compression of the cast-iron top, and the weight of the beam is very much reduced from what it would have been were it entirely cast-iron, which with the advantage of having wrought-iron a safer material than cast-iron to resist the tensile strain in the bottom, seems to be the object of the invention; I was shown an experimental beam of less dimensions, in which the cast-iron near the bottom had been cut through, and in this condition it had been submitted to a direct pressure until the cast-iron became fractured. The wrought-iron, although considerably elongated, was not fractured, and remained in its position in the groove in which it had been cast, even after the falling of the beam; showing that it is effectually secured in its position. After considering the beam in all its bearings, I do not hesitate to report that I consider it a safe structure for railway purposes when of sufficiently large dimensions.



I have, &c.

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

Appendix No. 17.

APPENDIX No. 17.

London, Brighton,
and South Coast
Railway.
(Thames Junction.)

LONDON, BRIGHTON, AND SOUTH COAST RAILWAY.—(Thames Junction.)

Office of Commissioners of Railways, Whitehall,
May 26, 1849.

SIR,

I HAVE the honour to report to you, for the information of the Commissioners, that I this day inspected the Thames Junction Line of the London, Brighton, and South Coast Railway.

This line leads from a siding of the London, Brighton, and South Coast Railway, near the New Cross station, to a depôt and wet-dock, which the Company have formed on the south bank of the Thames, near the Victualling-yard at Deptford; the total length is 7 furlongs and 8 chains. The line is intended principally for goods traffic; the Company anticipating that by having their own wet-dock upon the Thames, with a direct railway communication to their main lines, they will be enabled to land and ship heavy goods at a much cheaper rate than they have hitherto had it in their power to do by employing the intervention of the Surrey Canal Company, along whose wharf, near the Cold Blow-lane, the goods siding had originally been constructed.

The line, as constructed, adheres very closely to the Parliamentary plan and section; the only deviation of any consequence being the substitution of a gradient of 1 in 70 for one of 1 in 111, for a distance of $16\frac{1}{2}$ chains, to enable the engineer to carry the line over the road called Trunley's-lane by a girder-bridge, leaving the level of the road unaltered, instead of raising that road $11\frac{1}{2}$ feet and crossing it on the level. This appears to be a great improvement.

There are no cuttings on the line. The embankments are slight, and are made up of clay, and chalk, and mud from the dock. They have not yet settled into a permanent bearing, but appear sufficiently solid to allow of the line being used. There are 10 bridges on the line. Nine of them are cast-iron girder-bridges, showing nothing peculiar in their construction, and all apparently of ample strength. The only bridge which merits particular attention is a lift-bridge, by which the line crosses the Surrey Canal, near the New Cross station. The platform of this bridge is lifted from its place whenever a barge requires to pass, and is held suspended at a height of 10 feet from the water by wire-ropes at the four angles; these pass round rollers to the machinery employed in lifting, and terminate by compensating weights working in cast-iron cylinders. I enclose a drawing showing the details. The bridge was not quite completed when I inspected it this morning, the guide-rollers which are intended to give steadiness to the motion not being yet in place. There were no signals yet fixed to facilitate the safe working of the bridge; and the general fitting of the platform on its bearings, and the adjustment of the compensating weights, had not been sufficiently attended to.

There is but one viaduct. It is of considerable length; 635 yards. The material is timber, resting upon piling; the openings are 95 in number, 20 feet in span; the greatest height 21 feet. There is nothing peculiar in the construction.

There are four level-crossings, one of a turnpike-road at Deptford, and three of private roads. The turnpike and one of the private roads have gates closing across both rail and road, and are provided with gatekeepers.

The line is single throughout, but the Company have sufficient land to increase the width at any time; and the principal bridges are made sufficiently wide to accommodate two lines of rails. The formation level of the present single line is 22 feet wide.

The rails over the embankment are the ordinary double-headed rail, weighing 77 lbs. to the yard; those used on the viaduct are the flat-bridge rail, weighing 80 lbs. to the yard. The chairs are Ransom and May's patent.

The whole of the works on this line appear to me to be in a fit state to receive public traffic, with the exception of the lift-bridge over the Surrey Canal, the fittings of which are not yet completed, and for the safe working of which no system of signals has been as yet laid down. Inasmuch, therefore, as the proper working of this bridge is the point of the whole line which calls for more particular precaution, I am of opinion that the opening of the line in its present state would be attended with danger to the public by reason of the incompleteness of the works.

I would recommend that the opening be postponed till the fitting of all the parts of the lift-bridge be completed, and till proper signals be laid down to ensure its safe working.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
R. M. LAFFAN,
Capt. Royal Engineers.

Appendix No. 17.
—
London, Brighton,
and South Coast
Railway.
(Thames Junction.)

Office of Commissioners of Railways, Whitehall,
May 29, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the report made to them by Captain Laffan, after inspecting the Thames Junction Branch of the London, Brighton, and South Coast Railway, and to inform you that, for the reasons therein stated, they have postponed the opening of the line in question for public traffic for one month from this date; but that they will be willing to remove this restriction as soon as they are satisfied that all the arrangements connected with the lift-bridge upon the line are completed, and sufficient for the security of the public.

The Secretary of the
London, Brighton, and South Coast Railway Company.

I have, &c.,
H. D. HARNESS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
June 18, 1849.

SIR,

I HAVE the honour to report to you, for the information of the Commissioners, that I this day re-inspected the Thames Junction line of the London, Brighton, and South Coast Railway.

The lift-bridge over the Surrey Canal is now fixed complete; and an electric telegraph communicates from the bridge to either extremity of the line. An ordinary disk-signal is also placed at some distance from either end of the bridge, to be worked by wires.

I am of opinion that all the works connected with this line are now complete, and in a fit state to be opened for public traffic. I would suggest, however, that no engine be allowed to pass over the lift-bridge at a higher speed than five miles an hour.

It appears also desirable that before the line is opened, a code of regulations for the working of the bridge be drawn up, and agreed to by the Surrey Canal Company, and that it should receive the sanction of the Commissioners.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
R. M. LAFFAN,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
June 20, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you, with reference to the proposed opening of the Thames Junction Branch Railway, which was inspected on the 18th inst. by Capt. Laffan, that they cannot approve of the use thereof for public traffic until the regulations for the management of the lift-bridge across the Surrey Canal have been approved by them. The attention of the Company was called to this subject by a letter from this office on the 22nd ult., to which no answer has been received by the Commissioners.

The Secretary of the
London, Brighton, and South Coast Railway Company.

I have, &c.,
H. D. HARNESS,
Capt. Royal Engineers.

SIR,

London Terminus, June 25, 1849.

I BEG to acknowledge the receipt of your letter of the 20th inst., and to state that the Directors were under the impression that it had been understood that the Regulations suggested by the Commissioners' letter of the 14th February, 1848, for working the lift-bridge were adopted by the Company. They have now, however, in order to avoid any possible misapprehension, adopted a series of Regulations in the precise terms suggested by the Commissioners, a copy of which is enclosed, and they trust accordingly that any objection on the part of the Commissioners to the immediate opening of the Thames Junction Line will be removed.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
J. BUCKTON,
Secretary.
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Appendix No. 17.

London, Brighton,
and South Coast
Railway.
(Thames Junction.)

Regulations.—Thames Junction Railway, June 25, 1849.

1. That the bridge be always kept down, except when a vessel requires to pass.
2. That the electric telegraph now laid down be constantly maintained, to communicate between the bridge and each of the termini.
3. That a sufficient number of men be in constant attendance to work promptly both the telegraph and the lift bridge.
4. That no train shall start from either end of the line until a signal has been given to the men at the bridge, and a return signal made to the effect that the bridge is down, and everything secure; and the first signal shall in no case be given until the train is quite ready to start.
5. That the return signal shall not be given if any vessel requiring to pass has arrived nearer to the bridge than the posts fixed at 100 yards on each side.
6. After the return signal has been given, the bridge shall not be raised for a period of five minutes, or until the train has passed, if the interval be less than such period; and any vessel coming within the distance of 100 yards during this interval, must wait until it has elapsed, unless the train passes previously.
7. Vessels passing under the bridge shall use due diligence in passing, so that the bridge may be lowered again as speedily as possible.

By Order, J. BUCKTON, *Secretary.*

*Office of Commissioners of Railways, Whitehall,
June 28, 1849.*

SIR,

I HAVE the honour, herewith to return a copy of the Regulations proposed by the London, Brighton, and South Coast Railway Company, for the working of the lift bridge by which the Thames Junction Line crosses the Surrey Canal.

I would propose an addition to the sixth rule.

That rule provides, that

After the return signal has been given, the bridge shall not be raised for a period of *five minutes*, or until the train has passed, if the interval be less than such period; and any vessel coming within the distance of 100 yards during this interval, must wait till it has elapsed, unless the train has passed previously.

I would propose the following addition:—

If at any time, however, the interval of five minutes shall have elapsed after the return signal has been given, and the train has not yet passed the bridge, then, if a vessel be waiting within the distance of 100 yards, the signal man shall telegraph to the extremity of the line, to prevent the starting of the train; and on receiving a return signal to say that the starting of the train has been stopped, he shall cause the platform to be raised, to allow the vessel to pass. On no account, however, is the platform to be raised till the signal has been made that the starting has been stopped.

With this addition, I am of opinion that the proposed regulations will, if strictly adhered to, provide for the safety of the trains, and that this mode of working the bridge will interfere as little as is practicable with the traffic upon the canal.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

*Office of Commissioners of Railways, Whitehall,
June 29, 1849.*

SIR,

I HAVE been directed by the Commissioners of Railways to inform you, in reference to your letter of the 25th inst., transmitting Regulations for the lift bridge over the Surrey Canal upon the Thames Junction Railway, that when the Regulations have been altered by the following additions to the 6th Regulation, and a copy in duplicate sent to this office under the seal of the London, Brighton, and South Coast Railway Company, the Commissioners will signify their approval thereof:—

If at any time, however, the interval of five minutes shall have elapsed after the return signal has been given, and the trains have not yet passed the bridge, then, if a vessel be waiting within the distance of 100 yards, the signal man shall telegraph to the extremity of the line, to prevent the starting of the train, and on receiving a return signal to say that the starting of the train has been stopped, he shall cause the platform to be raised to allow the vessel to pass; on no account, however, is the platform to be raised till the signal has been made that the starting has been stopped.

I have, &c.,

To the Secretary of the
London, Brighton, and South Coast Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

Appendix No. 18.

Whitehaven and
Furness Railway.

APPENDIX No. 18.

WHITEHAVEN AND FURNESS RAILWAY.

SIR,

Windermere, June 5, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that, in compliance with their appointment, I this day inspected the Whitehaven and Furness Junction Railway from Whitehaven to Ravenglass, being a distance of 16 miles and 29 chains. I found the works generally of a light nature, and, as far as completed, well executed, with the

exception of a bridge over a high road at 15 miles 13 chains from Whitehaven, the arch of which is constructed of brickwork, with stone quoins. A settlement had taken place in the brickwork of the arch to such an extent that I consider that locomotive engines cannot be run over it without risk.

There are two temporary timber viaducts, over streams, the places of which are eventually to be supplied by masonry, and also temporary timber approaches to a timber viaduct over the Mite river, which will be superseded by the completion of the embankments at each end of the viaduct. In order to allow the continuation of these works after the opening of the railway, its line has been deviated, and several sharp curves introduced, but which, upon the completion of the works, will be removed. Although these curves are highly objectionable I conceive the traffic may be carried over them with safety by due attention to the maintenance of the road, and by the strict enforcement of instructions as to a very low rate of speed, 4 or 5 miles per hour, over them. The line is single throughout, with six intermediate stations, at each of which it is intended that sidings shall be laid for the accommodation of the traffic. Scarcely any of these sidings were completed; and there were no signals upon the line; and not one single station completed, or even in an advanced state; in several instances they were not even begun: I must report, therefore, that in my opinion the opening of the line, as inspected, will, by reason of the incompleteness and insufficiency of the works, be attended with danger to the public, on account of the insecure road-bridge before alluded to, the incompleteness of the sidings, and the absence of signals. I also remarked to the engineer upon an objectionable siding leading to a quarry which I considered it necessary to recommend to be altered before the opening of the line; and another small bridge near Whitehaven will require rebuilding.

The terminus at Whitehaven is of a temporary nature, and on a much lower level than described on the parliamentary level; but as it does not interfere at present with the streets of the town, stopping short of them, I see no objection to its being used temporarily until the railway shall be extended, provided care be used in working over a level crossing of a road numbered 10 on the parliamentary plan, and therein described as an occupation road with the railway passing over it; I was informed that this road is the property of the Earl of Lonsdale, but it nevertheless, appears to be used to a considerable extent, principally as a footpath, by the inhabitants of Whitehaven.

I have, &c.,

J. L. A. SIMMONS,
Capt. Royal Engineers.

Capt. Harness, R.E.,
&c. &c.

SIR,

Whitehaven, July 4, 1849.

I HAVE the honour to report, for the information of the Commissioners, that I have just inspected the Whitehaven and Furness Railway; and I find that the several works adverted to in Captain Simmons' report have been satisfactorily adjusted; viz., the brick arch of the bridge has been taken down and a cut stone one substituted; the platforms at the several stations, though not yet quite finished, are so far completed as to render the ingress and egress to and from the carriages perfectly safe; the signals are erected at four of the stations; and at the remaining two they are on the ground and ready to be put up; and the points leading to the quarry have been removed, so as to lead into a siding and render it impossible for a train to run into the quarry. I can, therefore, report that the line may be safely opened for passenger traffic.

I have, &c.,

GEORGE WYNNE,
Inspector of Railways.

Capt. Harness, R.E.,
&c. &c.

APPENDIX No. 19.

LONDON AND NORTH WESTERN RAILWAY.—(*Guides Bridge to Heaton Norris.*)

SIR,

June 23, 1849.

I HAVE to report, for the information of the Commissioners, that on the 14th instant I inspected the branch of the London and North Western Railway, which connects the Manchester and Birmingham line of that railway with the Manchester, Sheffield, and Lincolnshire Railway. This line starts from Heaton Norris, near Stockport, and joins the latter railway at Guides Bridge, its length being 4 miles, 69 chains.

The steepest gradients are 1 in 120, 70 chains in length, and 1 in 132, 60 chains in length.

There are three embankments of 45, 36, and 36 feet in height, which contain 109,515 cubic feet of earth; the others are unimportant. The deepest cutting does not exceed 20 feet. The slopes are at 2 to 1, and stand well.

There are no less than 23 bridges on this short length of line. None of them present anything peculiar in construction, but the one which carries the turnpike-road from Manchester to Buxton is remarkable for its extreme length, resembling a tunnel, the road crossing it at a very oblique angle.

There are no level-crossings for public road.

Appendix No. 19.

London and North
Western Railway.
(*Guides Bridge to
Heaton Norris.*)

Appendix No. 19.
London and North
Western Railway.
(Guides Bridge to
Heaton Norris.)

The permanent way is laid double; the rail weighs 65 lbs. per yard, and is of this form

The chairs weigh 23 lbs. and 29 lbs., and retain the rail by means of iron-wedges and keys.

The sleepers are 9 feet long, and are placed at average distances of 3 feet.

I found the line in good order, and everything complete, except the signal-posts. I have waited now till the last moment for the Engineer's certificate of their having been put up, but not having received it, I am compelled to report that, in my opinion, the line *cannot* be safely opened to the public using the same, without signal-posts at each end, and which were deficient at the time of my inspection.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

Cheadle, July 8, 1849.

I HAVE to report, for the information of the Commissioners, that proceeding from Manchester yesterday to inspect the London and North Western extension of the Marchfield Railway, which joins the North Staffordshire Railway at Marchfield, I passed over, at the request of the Engineer, the London and North Western line from Guides Bridge to Heaton Norris, near Stockport, and which, on account of the deficiency of signals I reported some short time since as not being in a fit state to open for the conveyance of passengers. I found that the necessary signals had been erected, and in my opinion the line may now be safely opened for the conveyance of passengers.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 20.

South Eastern
Railway.
(North Kent.)

APPENDIX No. 20.

SOUTH EASTERN RAILWAY.—(North Kent.)

SIR,

Whitehall, June 29, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that on the 26th instant I inspected the South Eastern Railway, from the junction with the Rochester and Gravesend Railway to the junction with the Greenwich Railway at Deptford, and thence the widening of the Greenwich Railway to the London-bridge station, and the line joining the Gravesend or North Kent line with the Bricklayers' Arms branch. I found the first-named line in an advanced state and ready to be opened for the conveyance of the public, from Gravesend to Erith, as soon as some recommendations which I considered necessary for the safety of the public shall have been carried out; but as it will be necessary, for reasons hereafter mentioned, that the opening should be postponed, I have not detailed these recommendations, as there will be another opportunity of seeing them, after they shall have been carried out. From Erith to Woolwich the rails were not laid, and a low embankment over the Erith marshes was not completed.

Through the town of Woolwich a good deal of work remained to be done, including arching, retaining walls, and some excavation. A tunnel at Charlton was not completed, the arch of the closing length being not yet turned. A good deal of excavation remained to be done at Lee, and a considerable length of the permanent road had yet to be laid. Under these circumstances, I have to report that the opening of the North Kent line, from the junction with the Gravesend and Rochester to the junction with the Greenwich Railway, will be attended with danger to the public by reason of the incompleteness of the works.

The permanent road on the widened part of the Greenwich Railway, from near the North Kent line to the London-bridge station, is not yet completed, as also on the junction of the North Kent line with the Bricklayers' Arms branch, the embankment of which latter is also in an unfinished state. The opening of these lines will therefore be attended with danger to the public in their present condition.

Much work can, however, by great exertion be effected in a few days, and the principal engineering works, such as bridges, tunnels, &c., being completed, I should think it might be ready for re-inspection, and to be opened to the public within a month.

I have, &c.,

Captain Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

SIR,

Whitehall, July 13, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that I this day inspected a portion of the North Kent line of Railway, extending from the Erith station to the junction with the Gravesend and Rochester Railway at Gravesend, a distance of 10 miles.

The whole of the works on this portion of the line are completed, and appear to have been

well planned and carefully executed. The permanent way is in fair order, and I believe this portion of the line to be in every way fitted to receive public traffic.

The suggestions made by Captain Simmons have all been carried into effect, with the exception of an alteration in the position of the meeting points for the four-line station at Gravesend. This, there has not yet been time to complete, but the engineer has engaged that till the change is effected he will cause the switches to be locked, so as only to allow of the use of the two-side lines. This, of course, will remove the objection to the present position of the meeting points.

Captain Harness, R.E.,
&c. &c.

I have, &c.,

R. M. LAFFAN,
Capt. Royal Engineers.

Appendix No. 20.

South Eastern
Railway.
(North Kent.)

SIR,

Whitehall, July 20, 1849.

I HAVE the honour to report, for the information of the Commissioners, that I yesterday inspected a portion of the North Kent line between Woolwich and Erith, and I found that several chains in length of the up line yet remained to be laid, and through the town of Woolwich it was so encumbered with rubbish and materials, as to be impassable. I have, therefore, to report that, owing to the incompleteness of the permanent way between Woolwich and Erith, this portion of the line cannot, in my opinion, be opened with safety to the public using the same.

Being obliged to walk over the above portion of the line, it was half-past eight P.M. before I had completed my inspection; I was, therefore, unable to inspect the Greenwich portion of the line or the Bricklayers' Arms branch.

I have, &c.,

Captain Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

Whitehall, July 26, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that I this day inspected the North Kent Railway, from Erith to the junction with the Greenwich line; the widening of the Greenwich line, and the Bricklayers' Arms branch.

The principal works on these lines, namely, the under and over bridges, tunnels, viaducts, station platforms, &c., are completed to an extent sufficient to ensure public safety; the only point wanting being the parapets to some of the over bridges.

The permanent way is laid complete over the whole distance; it is not in the very best order, for the late heavy rains have caused the embankments to settle in many places, as is generally the case on a new line. The cuttings, also, have been flooded by the great quantity of water that has lately fallen, and the arrangements for draining them are not yet quite complete.

I am of opinion, however, that there remains nothing of importance to be done on these lines, that cannot easily be completed by Monday next, the 30th instant, and I would recommend that permission be given to the Company to open on that day, but would suggest that, until the embankments are quite consolidated, the Company's trains should be restricted to a moderate speed.

I have, &c.,

Captain Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
July 26, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you, that on considering the report made to them by Captain Laffan, after his inspection of the North Kent Railway, from Erith to the junction with the Greenwich Railway; the widening of the Greenwich Railway; and the Bricklayers' Arms branch; they do not object to these lines being opened for public traffic on Monday next; but they trust the Directors of the Company will take such steps as may be necessary to ensure the restriction of the trains to a very moderate speed, until the embankments are completely consolidated.

I have, &c.,

The Secretary of the South Eastern
Railway Company.

H. D. HARNESS,
Captain Royal Engineers.

Appendix No. 21.

APPENDIX No. 21.

LONDON AND NORTH WESTERN RAILWAY.—(Huddersfield and Staleybridge.)

SIR,

Manchester, July 3, 1849.

I HAVE the honour to report, for the information of the Commissioners, that yesterday, the 2nd instant, I inspected the railway from Huddersfield to Staleybridge, belonging to the London and North Western Railway Company, and I found the platforms and signals at the

London and North
Western Railway.
(Huddersfield and
Staleybridge.)

Appendix No. 21. intermediate stations, between the terminal points, to be generally in such an unfinished state that I am of opinion that the railway cannot with safety be opened to the public using the same, owing to the incompleteness of those works.

London and North
Western Railway.
(Huddersfield and
Staleybridge.)

Captain Harness, R.E.,
&c. &c.

I have, &c.,
GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

July 8, 1849.

ON my return from inspecting the Leeds and Thirsk Railway, I again went over the London and North-Western Railway from Huddersfield to Staleybridge, and I found that since my inspection of this line on the 2nd instant, the signals and platforms had been completed; and I can therefore now report that this railway may be safely opened for the conveyance of passengers.

Captain Harness, R.E.,
&c. &c.

I have, &c.,
GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 22.

Dundee, Perth, and
Aberdeen Railway.

APPENDIX No. 22.

DUNDEE, PERTH, AND ABERDEEN RAILWAY.

SIR,

Stirling, February 17, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that in compliance with their instructions of the 6th instant, I yesterday inspected the extension of the Dundee and Perth Railway, from the north side of the River Tay into the town of Perth, adjoining Princes-street, being a distance of $36\frac{1}{2}$ chains, of which 444 yards is formed on timber segmental laminated arches, resting on timber piles, the spans being 50 feet and rise $6\frac{1}{2}$ feet, followed by an iron swing-bridge, over a clear opening of 50 feet, and the remainder, with the exception of 8 chains, which is on firm land, being on small brick arches. A greater portion of the entire distance on the viaduct is on a curve of 15 chains radius, good and efficient check-rails extending through the curve, tending much to security in the use of the bridge, with respect to which I have to report that I consider it safe at moderate speeds; but inasmuch as there is a great deal of movement in the timber laminated arches, extending in one that I tried to a rise of half an inch, and a fall of one inch and a half, or a movement altogether of two inches in the passing of an engine, I should strongly recommend that some method be tried by which the structure may be stiffened, as this constant movement must materially tend to the destruction of the bridge.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
J. L. A. SIMMONS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
February 19, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the report made to them by Captain Simmons, after inspecting the extension of the Dundee and Perth Railway, into the town of Perth, and to request you to call the attention of the Directors of the Company to the remarks made therein upon the want of stiffness of the timber arches, and upon the necessity for their being traversed only at moderate speed.

The Commissioners do not object to the opening of this extension for public traffic at the time proposed by the Company, but they hope the Directors will order the bridge to be stiffened without delay, and cause stringent regulations with respect to the speed employed thereon to be enforced.

An early opportunity will be taken to cause its re-inspection by an officer of this department.

The Secretary of the
Dundee, Perth, and Aberdeen Railway Company.

I have, &c.
H. D. HARNESS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
July 9, 1849.

SIR,

I HAVE the honour to report to you, for the information of the Commissioners, that on the occasion of my late visit to Perth, to inspect a portion of the Aberdeen Junction Railway, I had an opportunity of examining the timber-bridge composed of laminated arches, by which that line crosses the River Tay.

Captain Simmons, in his report dated February 17, 1849, upon the portion of the line in which this bridge is included, states:—

"I consider it safe at moderate speeds; but inasmuch as there is a great deal of movement in the timber laminated arches, extending in one that I tried to a rise of half an inch and fall of one inch and a half, or a movement of altogether two inches in the passing of an engine, I

should strongly recommend that some method be tried by which the structure may be stiffened, as this constant movement must materially tend to the destruction of the bridge."

In examining this bridge, the object I had chiefly in view was to ascertain how far the "constant movement" adverted to by Captain Simmons might be supposed to have loosened the connexion of the several parts, or to have lessened the rigidity of the timber: and this effect, if it did exist, I considered I could best trace by examining the extent of the movement, and comparing it with that ascertained in February last.

The Tay bridge consists of a series of segmental laminated arches of timber, 50 feet in span, with a rise of $6\frac{1}{2}$ feet, supported on wooden piles. These piles are, of course, wholly insufficient to bear the horizontal thrusts of the arches: they simply support the weight, and the horizontal thrust is disposed of by making one arch butt against another. The consequence of this arrangement is, that one arch cannot be depressed without immediately affecting its neighbour, and thus the effect of any movement at one end of the bridge causes a series of vibrations to run through the whole structure to the other extremity.

On measuring the amount of motion caused by the passage of an engine, I found that at whatever distance the engine was from me, there was a perceptible rising and falling in the arch, and this effect went on increasing as the engine approached, till it amounted to a deflection of $2\frac{1}{4}$ inches when the engine was directly above me, and a rising above the natural level of $\frac{1}{4}$ th of an inch when the engine was passing over the adjoining arches on either side; there was thus a total vertical movement of 3 inches in the very short time an engine takes to run over 50 feet.

It appears from this that, to use Captain Simmons' words, "the constant movement has materially tended to the destruction of the bridge," for the movement has increased 50 per cent. since February last.

I am of opinion that it would be dangerous to pass engines over this structure at a high speed; at moderate speeds, however, never exceeding 8 miles an hour, I am of opinion that it may be passed with safety.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
July 10, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the report made to them by Captain Laffan after his recent inspection of the timber-bridge by which the Dundee and Perth Railway crosses the Tay at Perth, and to request you to call the attention of the Directors to the communication from this office of the 19th February last, and to point out to them that the greatly increased movement observed by Capt. Laffan is a proof that the recommendation made by Capt. Simmons, and the opinion expressed by him in the last paragraph of his Report, of which a copy was forwarded with that communication, were judicious, and deserving their attention.

I have, &c.,

The Secretary of the
Dundee, Perth, and Aberdeen Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

APPENDIX No. 23.

NORTH STAFFORDSHIRE RAILWAY.—(Churnet Valley, Wellington Branch.)

SIR,

Cheadle, July 10, 1849.

I HAVE to report, for the information of the Commissioners, that I yesterday inspected the North Staffordshire Railway from Uttoxeter to the junction at North Rode, on the main line, about 5 miles from Macclesfield, commonly known as the Churnet Valley line, 27 miles 71 chains in length. I also inspected the Wellington branch, which forms the north fork of the junction with the Midland Railway at Wellington, $6\frac{1}{2}$ miles south of Derby, and which is 4 miles $46\frac{1}{2}$ chains in length.

I found the Churnet Valley in good order, with the exception of the part which passes through the narrowest part of the valley. Here the chief difficulty in constructing the line occurred owing to the winding course of the Churnet river on one side and the canal on the other, and the tendency of the sides of the cuttings to slip; to correct this it has been found necessary to build dry retaining walls of from 10 to 15 feet in thickness. The curves are numerous, and the permanent way will require much attention. Over this part of the line, which extends for 5 miles from Alton towards Leek, I would recommend a moderate speed to be maintained for some time.

In the descriptive detail of the line furnished by the engineer, seven intermediate stations are proposed, but at present only two are to be opened, viz., at Alton and Leek, the platforms of these are completed, and the signals are in progress of erection. The signals and points at the junctions at either end are complete.

I am of opinion that, with attention to the recommendation I have made, the line may with safety be opened for the conveyance of passengers.

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Appendix No. 22.

Dundee and Perth
Railway.

Appendix No. 23.

North Staffordshire
Railway.
(Churnet Valley.)

Appendix No. 23.
 North Staffordshire
 Railway.
 (Churnet Valley.)

I return the plans and details in order that the public level crossings therein detailed may be compared with the special Act, to ascertain whether they have been all authorized or not. Two level crossings were pointed out to me as having been made without authority: the first occurs at 2 miles 49 chains of a parish road from Crakemarsh to Crighton, which, it was stated, was made at the unanimous request of the inhabitants. The other occurs at 24 miles 3 chains of a parish road from Rushton to Congleton, and has been a compromise between the landowner and the Company, the former waiving his claim to an over-bridge on condition of, the latter giving a station.

The following deviations appear in the curves, at 3 miles 55 chains: a curve of 33 chains radius has been substituted for one of 60 chains, and at the North Rode junction a curve of 15 chains for one of 40 chains radius.

I found the up line of the Wellington branch complete, as also the junction and signals at either end. The down line was in a backward state. I am to see it again to-day, and after doing so I shall be able to report whether the line can be opened as a double or a single one.

There are three level crossings of public roads, which are stated to be authorized by the special Act, and are laid down as such on the Parliamentary plans.

I have just been again over the Wellington branch, and I find that so large a portion of the down line still remains to be ballasted that I am of opinion that that line cannot, owing to the incompleteness of its permanent way, be opened with safety for the conveyance of the public using the same; I therefore recommend that only one line of the Wellington branch, viz.—the up—shall be opened for the conveyance of the public.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

GEORGE WYNNE,
 Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
 July 11, 1849.

SIR,

I HAVE been directed, by the Commissioners of Railways, to forward to you the enclosed copy of the Report made to them by Captain Wynne, after his recent inspection of a part of the North Staffordshire Railway, and to inform you that, for the reasons therein stated, they have postponed the opening of the down line of rails on the Wellington branch for one month from this date, but that they will appoint an officer to re-inspect the line on being informed that the work is completed. They do not object to the other portions inspected being opened for traffic.

I am, however, to request you to call the particular attention of the Directors of the Company to the recommendation made by Captain Wynne, that only moderate speeds should be allowed for some time upon the Churnet Valley line, and to request the explanation of the Company with respect to the two level crossings stated to have been made without the necessary authority, and with respect to the two cases mentioned in the Report, of unauthorized deviation from the curves sanctioned by Parliament.

I have, &c.,

The Secretary of the
 North Staffordshire Railway Company.

H. D. HARNESS,
 Capt. Royal Engineers.

SIR,

July 17, 1849.

I HAVE the honour to report, for the information of the Commissioners, that I yesterday re-inspected the second line of rails on the Wellington branch of the North Staffordshire Railway, and I found it completed; I am, therefore, of opinion that it may now be safely opened for the conveyance of passengers.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

GEORGE WYNNE,
 Capt. Royal Engineers.

Appendix No. 24.

APPENDIX No. 24.

North Western
 Railway.
 (Skipton to
 Ingleton.)

NORTH WESTERN RAILWAY.—(Skipton to Ingleton.)

SIR,

Leeds, July 15, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that I yesterday inspected a portion of the North Western Railway, extending from its junction with the Leeds and Bradford Branch of the Midland Railway at Skipton, to Ingleton, a distance of 25 miles.

As I am of opinion that the line is not yet in a sufficiently advanced state to admit of its being opened with safety, I will confine myself in this Report to stating the reasons that have led me to that conclusion:—

The line, which is as yet only a single one, is generally in fair order; but there are still many places where the ballasting is not complete, and some of the cuttings are not yet sufficiently cleared away even for a single line.

The station arrangements at the Bell Busk, Thellifield, Long Preston, Settle, Clapham, and Ingleton stations are very incomplete. There are no signals at any of these stations, and at most of them the platforms are unfinished, and, in some instances, not even begun.

In every other respect, I believe the permanent works of this line to be complete, as for a single line. The bridges, viaducts, &c., appear all to be well planned and carefully executed. In consequence, however, of the unfinished state of the station arrangements, I am compelled to report that, in my opinion, the opening of this portion of the North Western line, in its present state, would be attended with danger to the public, by reason of the incompleteness of the works.

On making inquiry as to the amount of locomotive power with which the Company proposed to commence the traffic of this new line, I was informed that it was proposed to employ two engines, one of which was that which had taken me over the line. It was a four-wheeled engine of the old construction, which had been running for three years on the London and North Western Railway, but which had been sold by the London and North Western Company to make way for the six-wheeled engine of more modern construction. The second engine I was informed was in Liverpool, and was in every respect similar to the one I had just seen. I am of opinion that this is not a sufficient amount of locomotive power to conduct the traffic of a line 25 miles in length; and it further appears to me that a Company just starting, and having it in their power to choose what description of engine they please, should begin with the more approved modern six-wheeled engine, instead of purchasing old four-wheeled engines that have been discarded from the service of another line. The Chairman of the Company informed me that it was his intention to hire a six-wheeled engine previous to the day of opening.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
R. M. LAFFAN,
Capt. Royal Engineers.

SIR,

Whitehall, August 3, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that I inspected the North Western Railway from Skipton to Inglet on the 24th July; in my inspection I confined myself to the points objected to by Captain Laffan on his previous inspection, viz., the incompleteness of the platforms, want of signals, deficiency of ballast, and an insufficient amount of locomotive stock. I found the platforms had been completed, the necessary signals were up, and the line sufficiently ballasted; with regard to the locomotive stock, the list furnished me by the secretary was three locomotive engines, two first-class carriages, three second-class, and three third-class.

Considering the circumstances of the line, that it is not yet a through one, and that the country it passes through is not a thickly populated one, I am of opinion that the amount of engine power may for the present be considered sufficient: when the line becomes more extended, by the opening to Lancaster, I would recommend the attention of the Inspecting officer being particularly directed to this subject, with a view to ascertain that the rolling stock of the Company is proportioned, both in quality and quantity, to the increased extension of the line. I am of opinion that the line may now be safely opened for the conveyance of passengers.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
GEORGE WYNNE,
Capt. Royal Engineers.

APPENDIX No. 25.

MANCHESTER SOUTH JUNCTION AND ALTRINCHAM RAILWAY.

SIR,

July 8, 1849.

I HAVE to report, for the information of the Commissioners, that I yesterday inspected the South Junction Railway, 1 mile 4 furlongs and 82 yards in length; and part of the Altrincham branch, which extends from the South Junction Railway, in Castlefield, in Manchester, to the Altrincham station, a length of 7 miles 40 chains. The South Junction Railway commences about 300 yards from the London station of the Manchester and Birmingham Railway (London and North Western); the junction is made by both lines of the South Junction Railway coming into the down line of the Manchester and Birmingham Railway, which cause two meeting points on the latter line instead of one; occurring however so close as they do to the terminus, I do not consider the danger to the public is increased. The South Junction is constructed entirely on arches. At the Oxford-street station there is a coal-siding off the down line, which involves meeting points. From the limited space which a viaduct admits of for forming a siding, I think it is less objectionable to pass into the siding directly than by the operation of shunting, moreover, Oxford-street station is the central station for the town, and all trains will stop at it. The points to connect the line with the Liverpool and Manchester Railway are not yet put in; the line, therefore, throughout its entire length, cannot be opened with safety to the public using the same, owing to the incompleteness of those works, viz.—the junction with the Liverpool and Manchester Railway; but I am of opinion that it will be perfectly safe for the conveyance of passengers as far as the junction with the Altrincham branch at Castlefield, in Manchester, 1 mile 82 yards from the junction with the Manchester and Birmingham Railway; and I recommend that the certificate for opening the line be only granted for that distance, which will allow the working of the Altrincham branch. The permanent way is laid double throughout.

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Appendix No. 24.

North Western
Railway.
(Skipton to
Inglet.)

Appendix No. 25.

Manchester South
Junction and
Altrincham
Railway.

Appendix No. 25.

Manchester South
Junction and
Altrincham
Railway.

The Altrincham branch commences at Castlefield, in Manchester, and is in its entire length about 7 miles; the Altrincham station, to which point only it is at present completed, occurs at a level crossing of the road from Altrincham, very near the town. There is a turn-table in progress, and not far from completion; but until it is finished—to avoid travelling tender-foremost—the line will be worked by an engine complete in itself, carrying its own coke and water. The permanent way, which is double, is in very good order, and the platforms and signals are complete; I am of opinion that this line may with safety be opened for the conveyance of passengers.

Three level crossings occur on the line, across the three last public roads which the line crosses; they have gates shutting across both road and railway. The two first of these, I was informed, were substitutions for over-bridges, and are therefore in violation of the special Act.

The third level crossing is at 7 miles 24·5 chains over the turnpike-road from Altrincham to Stockport.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
July 9, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the Report made to them by Capt. Wynne, after his recent inspection of the Manchester South Junction and Altrincham Railway, and to inform you that, for the reasons therein stated, they have postponed the opening of the portion between the Liverpool and Manchester Railway, and the junction at Castlefield, in Manchester, for one month from this date, but that they will appoint an officer to re-inspect the line on being informed that it is ready for re-inspection.

The Commissioners do not object to the opening of the part of the line between the junction at Castlefield and Altrincham, but they request an explanation of the circumstances under which, as stated in the Report, three unauthorized level crossings of public roads have been made, one of which, however, they presume to be the same as that with respect to which the decision of the Commissioners was expressed in the letter from this office, on the 30th ultimo.

I have, &c.,

The Secretary of the Manchester South Junction
and Altrincham Railway Company.

H. D. HARNES,
Capt. Royal Engineers.

Manchester South Junction and Altrincham Railway Offices,
Manchester, July 11, 1849.

SIR,

I AM instructed to acknowledge the receipt of your letter of the 9th instant, enclosing a copy of Captain Wynne's Report to the Commissioners of Railways, stating that they have postponed, for the reasons assigned in the Report, the opening of the portion of the railway between the Liverpool and Manchester Railway and the Junction at Castlefield for one month, but intimating that they would appoint an officer to re-inspect the line on being informed that it was ready for re-inspection. I have the satisfaction to inform you that the junction with the Liverpool and Manchester Railway will be ready for inspection on Saturday next, the 14th instant, and if, consistently with Captain Wynne's engagements, the view could take place on that day, a favour would be conferred upon the Company.

Your letter proceeds to state that the Commissioners do not object to the opening of that part of the line between the junction at Castlefield and Altrincham, but requests an explanation of the circumstances under which, as stated, three unauthorized level crossings have been made.

I observe that the Report represents the Altrincham branch from Castlefield to the station in Altrincham as perfectly sure for the conveyance of passengers; and the objection to the South Junction line only extends to the portion referred to in the first part of this letter. To work the Altrincham branch with convenience to the public the trains should run from the Oxford-road station, which is on that part of the south line which is approved of; and I would therefore respectfully request that the permission to open the Altrincham branch from Castlefield to Altrincham may be extended so as to permit the use of the Oxford-road station.

As to the three level crossings referred to, one of them (the principal one, crossing a turnpike-road) was required by the trustees of the road to be on the level, and they obtained the insertion of a clause in the Company's Act authorizing it. With respect to the others, the circumstances connected with their formation are fully reported in my letter to you of the 28th June.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

JAMES KIRKMAN, Secretary.

SIR,

July 17, 1849.

I HAVE the honour to report, that I have just re-inspected the South Junction Railway, and I find that the only point which was defective on my former inspection has been com-

pleted, viz., the junction with the Manchester and Liverpool Railway; I am therefore of opinion that the remaining portion of the South Junction Railway, viz., from the point of departure of the Altrincham branch to its junction with the Manchester and Liverpool Railway, may now be opened with safety for the conveyance of passengers.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 25.
Manchester South
Junction and
Altrincham
Railway.

APPENDIX No. 26.

YORK, NEWCASTLE, AND BERWICK RAILWAY.—(*Warkworth and Washington.*)

SIR,

Newcastle, July 18, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that on Monday the 16th instant, I inspected the Warkworth and the Washington branches of the York, Newcastle, and Berwick Railway.

The Warkworth branch is a single line; the permanent way is laid complete, with the exception of a level crossing over a private coal railway, where the work has been delayed by some dispute with the owners. The bridges, both over and under, are of very small span, and are all completed; but there is no accommodation provided for passengers, as the Company have not yet made up their minds where to have their station.

I would recommend that the opening of this branch be postponed till the Company have erected a platform to enable the passengers to get safely in and out of the carriages; and till the level crossing over the private coal railway be properly laid and protected by a signal. I am of opinion that the opening of this branch, in its present state, would be attended with danger to the public.

The Washington branch is not yet completed, the permanent way being only partly laid. I am of opinion that the opening it would be attended with danger to the public.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Appendix No. 26.
York, Newcastle,
and Berwick
Railway.
(*Warkworth and
Washington.*)

SIR,

Railway Commissioners' Office,
August 21, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that on the occasion of my late visit to Newcastle to inspect the High-level Bridge, I was requested to look again at the Washington branch of the York, Newcastle, and Berwick Railway, which had been postponed for a month on my first Report. On my going over the line again, I found that everything which I had noticed as deficient on my first inspection, had been made good; and that the Washington branch was then in fair order, and quite fit to be opened for passenger traffic. I accordingly told the engineer to the line that, if he would cause an official notice of opening to be sent in to the Commissioners, and they referred the subject to me, I should be in a position to report that the line was ready.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

APPENDIX No. 27.

MIDLAND RAILWAY—(*Leicester and Swannington Junction.*)

SIR,

July 20, 1849.

I HAVE the honour to report, for the information of the Commissioners, that on the 16th inst. I inspected the Leicester and Swannington Railway, from its junction with the Midland Railway, near the Leicester station, to where it joins the Leicester and Swannington Railway, in the parish of Ratby, the distance being 6 miles 55 chains. I found the works complete, with the exception of the signals. There was no signal up at the junction with the Swannington Railway, and from the extreme sharpness of the curve at the Midland Junction, the radius being only 11 chains, I consider that a distance-signal at the Swannington end of the curve auxiliary to those erected at the Midland end, is necessary to ensure the safety of the traffic. I have waited some days for the engineer's certificate of these signals having been put up, but not having yet received it, though it was promised to me on Thursday, I am compelled to state that, in my opinion, from the incompleteness of the signals, the line cannot with safety be opened to the public using the same.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 27.
Midland Railway.
(*Leicester and Swan-
nington Junction.*)

Appendix No. 27. SIR,

July 21, 1849.

Midland Railway.
(Leicester and Swannington Junction.)

I HAVE the honour to inform you that I have this day received a certificate from the engineer of the Leicester and Swannington Railway, certifying that the signals at either end of the line have been erected; I am, therefore, now satisfied that the line from the Midland Junction to Ratby may be opened with safety for passenger traffic.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 28.

APPENDIX No. 28.

Mold Railway.

MOLD RAILWAY.

SIR,

July 20, 1849.

I HAVE the honour to report, for the information of the Commissioners, that I yesterday inspected the Mold Railway from its junction with the Chester and Holyhead Railway to the town of Mold, the length of the line being 10 miles, of this $7\frac{1}{4}$ miles from the junction is a double line, the remainder of the distance into the town is single; I found the line in good order, the works well constructed and complete in every particular, with the exception of the signals, which were incomplete at the junction, at the stations, and at the terminus.

I must therefore state that, in my opinion, owing to the incompleteness of these works, viz., the "signals," the line cannot be opened with safety to the public using the same.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

London, August 1, 1849.

I HAVE the honour to report, for the information of the Commissioners, that I yesterday re-inspected the Mold Railway from its junction with the Chester and Holyhead Railway to the town of Mold, and I found that the signals which were not erected on my first inspection are now completed, and I am of opinion that the line may be opened with safety for the conveyance of passengers.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 29.

APPENDIX No. 29.

Lancashire and
Yorkshire Railway.
(Ashton Branch.)

LANCASHIRE AND YORKSHIRE RAILWAY.—(Ashton Branch.)

SIR,

Whitehall, August 1, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that I yesterday inspected the second line of rails of the Ashton branch of the Lancashire and Yorkshire Railway; which commences at Miles Platting station, on the Manchester and Leeds line, and is $6\frac{1}{2}$ miles long. From Miles Platting to Clayton Bridge, a distance of 2 miles, the branch has been worked as a double line for about a year, and from thence to the terminus as a single line; it does not appear, however, that the Commissioners' sanction was ever obtained for the double portion; I therefore include in my Report the second line, commencing at Miles Platting to where it joins the Staleybridge station of the Manchester, Sheffield, and Lincolnshire Railway, by means of a short junction of 25 chains long, which has just been executed by the latter Company, and which I also include in this Report, though I believe, strictly speaking, a notice of opening should have been given by that Company.

All the works of the Ashton branch were, at the time of their construction, made with a view of allowing a double line of permanent way, with the exception of the arched viaduct 120 yards in length, over the river Medlock at Clayton bridge, which was made only sufficiently wide to carry a single line: it has now been doubled in width, the new half being in every respect similar to the part first constructed; the piers and abutments are of stone, and the arches of brick, semicircular, 30 ft. span, turned in mortar, with the exception of 6 ft. of the crown, which is in cement; the five farthest arches had, at the time of my inspection, the centres still in; they had been slightly eased, but not sufficiently so as to relieve the arches at the haunches of all support: on inquiry I found that they had been keyed but a few days, and that they had been turned under unfavourable circumstances of weather, and the mortar at the joints was still quite soft; as I did not see the arches entirely relieved from all support, it is impossible to pronounce whether the structure will remain in equilibrium after the centres are removed. I must therefore state, that in my opinion the portion of the second line of rails passing over the Medlock river near Clayton bridge cannot, owing to the incompleteness of the viaduct, be opened with safety to the public using the same; but all the other portion of the second line from Miles Platting to the Staleybridge station of the Manchester, Sheffield, and Lincolnshire Railway,

I found in good order, and I am of opinion it may be opened with safety for the conveyance of passengers; and I recommend that, in granting the certificate to the Company for opening the second line, they should be restricted to using the old single line over the viaduct.

The signals at the Staleybridge junction are sufficient for the safe working of the lines of the two Companies; and the charge of the signals of both lines at this point is as it should be, in the hands of the servants of one Company; viz., the Manchester, Sheffield, and Lincolnshire. I would only suggest that they should always be kept at the *stop*, which will give the signal-man more complete control over the lines of each Company.

As the old terminus of the Ashton branch may now be considered as a siding, I would recommend the switches leading into it to be weighted, to keep open into the junction.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 29.

Lancashire and
Yorkshire Railway.
(Ashton Branch.)

SIR,

August 17, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that I have re-inspected the viaduct on the Ashton branch of the Lancashire and Yorkshire Railway: I found the centres removed (which on my former inspection of this line had been left in), and no perceptible settlement in the arches: the whole structure appears to be carefully and substantially built; and I am of opinion that the line passing over the new portion of this viaduct may now be safely opened for passenger traffic.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

December 6, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that on the 27th of October I inspected the Charleston curves on the Leeds and Manchester Railway; I have delayed sending in my report until I was able to procure plans and sections illustrative of the works at this spot.

The Commissioners are no doubt aware that it was here the Company, on the first formation of the line endeavoured to construct a tunnel, which they were afterwards obliged to abandon, the nature of the strata presenting almost insuperable difficulties to the construction of such a work; the line had, therefore, to be temporarily deviated in a circuit round this spot which necessitated the introduction of some very objectionable curves.

The short portion of line which I inspected, about 23 chains in length, I was informed was as nearly as possible a return to the original Parliamentary line, only substituting an open cutting for a tunnel. The formation at this spot is a *débris* of clay and rock lying on a highly inclined bed of blue shale; the clay is of so soft a nature, and so much penetrated with water, as to be incapable of bearing any great weight; and from its inclined position it was most difficult to prevent it from slipping. The present level of the rails is about 12 feet above the shale; to form, therefore, a hard road, it was necessary to remove this depth of the upper stratum, and to introduce some kind of abutment against the tendency of the superior mass to slip; this portion of the upper stratum was accordingly removed, and the blue shale underlying was also excavated to a depth of 5 or 6 feet; and on the shale for a foundation, a solid ashlar invert was built (dry) 18 feet deep, and about 36 feet wide; and on the top of this was laid the permanent way; the masonry extends for about 220 yards through the cutting, but it is not quite continuous, some portion of the cutting having been found to be composed of a material sufficiently hard to support the road.

This mass of masonry toothed into the shale has been, as yet, found sufficient to resist the sliding tendency of the mass; the slope of the cutting on the superior side is at $1\frac{1}{2}$ to 1, and on the opposite side at 1 to 1.

Preliminary to making the excavations for the masonry, extensive drainage operations were undertaken; seven shafts at nearly equal distances along 240 yards of the line of railway were sunk to the depth of 45 feet below the level of the rails; and from these, 4 ft. headings were driven in the direction of the line of railway till they met; and the heading from the last shaft was turned into the river; these headings as well as the shafts, were afterwards filled in with broken stone, leaving a 12-inch drain along the bottom of the former; besides these, several short headings were driven in at the junction of the two strata, and connected with the main heading by shafts under the masonry.

The mass of masonry under the permanent way, it will be perceived, is very great; and so expensive a mode of construction would probably not have been adopted had not the stone from the old tunnel been on the spot.

The curves have been reduced from 1,100 feet radius to 2,000 feet radius.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 30.

London and South
Western Railway.
(*Guildford,
Farnham, Alton,
and Godalming
Branches.*)

APPENDIX No. 30.

LONDON AND SOUTH WESTERN.—(*Guildford, Farnham, Alton, and Godalming.*)

SIR,

Railway Commissioners' Office, August 8, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that, yesterday the 7th inst., I inspected the Guildford, Farnham, and Alton branch of the London and South Western Railway from Guildford to Farnham.

The line between Guildford and the junction with the Reading, Guildford, Dorking, and Reigate Railway at Ash, is in a fit state to receive passenger traffic, and I beg to recommend that permission be given to the Company to open that portion.

The remainder of the line from the Ash junction to Farnham is not in a fit state to open; the permanent way is in bad order, with numerous shifting rails instead of switches, and there are neither platforms nor signals at the stations. I am, therefore, of opinion that the opening the portion between the Ash junction and Farnham would be attended with danger to the public by reason of the incompleteness of the works and of the permanent way.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

SIR,

Railway Commissioners' Office, August 17, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that, on Wednesday the 15th inst., I inspected a portion of the Guildford and Farnham branch of the London and South Western Railway, extending from the Ash junction to the town of Farnham, and that on the same day, and again yesterday the 16th, I inspected a portion of the Godalming branch of the same railway extending from the Guildford station to Shalford.

The line from Ash to Farnham is single, with short double portions at either extremity. The works are all calculated, however, so as to allow of a second line being added if found necessary. The works, stations, signals, permanent way, &c., are all in fair order, with the exception of one embankment, the material of which, a soft and treacherous blue clay, is one of the most unfavourable; this is continually settling and breaking away at the sides, and will for some time to come demand great vigilance in the Company's servants to insure the safety of the trains. I would recommend that the Company be allowed to open this line, working it in the manner stated to me, namely, by allowing only one engine to be at any time on the single line, and restricting the trains to a very moderate speed. I would suggest that a man be specially appointed to examine the embankment in question, previous to the passage of every train.

The portion of the Godalming branch now proposed to be opened is only 1 mile and 12 chains in length. The works upon it, however, are heavy, there being two tunnels, one 968 yards in length through chalk, and the other 132 yards in length through sand.

In the chalk tunnel the material was found to be favourable, lying in regular layers, for one-third of the whole length, but on the remaining two-thirds the chalk lay in irregular detached masses, and great difficulties were experienced in prosecuting the work. The tunnel appears in more than one place to have given way to the pressure, and to have been rebuilt; and the form is irregular, the height of the crown varying sometimes 15 inches within a very short distance. I had no means of ascertaining whether this apparent flattening of the arch arose from its giving way to the pressure after it was built or whether it was built so; I think it more probable that it was due to the former cause, as I can scarcely believe that any workmen could have built a tunnel in such a way. I must add, however, that neither the materials nor the workmanship of this structure appear to have been of the best description.

The short tunnel through the sand shows also a very rough description of work, and in more than one place there are evident signs of the arch having changed its form under the load. At one place, for a length of 40 to 50 feet, the side walls had been pressed out by the combined action of the arch and of the sand at the back, to the extent of 7 or 8 inches, and the bricks of the facing showed evident signs that they were giving way; they were full of cracks, and one fell to pieces altogether on my striking it a slight blow with a hammer. I at once informed the engineer to the line, that I could not recommend that a line should be opened on which such a defective piece of work occurred; and he gave directions on the spot to have the whole of that defective portion removed. This will require 9 or 10 days to effect; and in the mean time I would propose again to re-examine the whole work in both tunnels, with a view to arrive at a definitive opinion as to their stability. The engineer to the line has promised to furnish me with accurate sections of all the flat portions of the arches so as to enable me to judge of the cause of their present shape.

I beg to conclude, by stating that, in my opinion the opening of this portion of the Godalming branch would now be attended with danger to the public by reason of the incompleteness of the works.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
August 18, 1849.

Appendix No. 30.

London and South
Western Railway.
(Guildford,
Farnham, Alton,
and Godalming
Branches.)

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the report made to them by Captain Laffan, after his recent inspection of a portion of the Guildford and Farnham Branch Railway, and of that portion of the Godalming branch between the Guildford station and Shalford, and to inform you that, for the reasons therein stated, the Commissioners have postponed the opening of the latter portion of railway, viz., between Guildford and Shalford, for one month from this date; but that they have at the same time requested Captain Laffan to continue his examination of the tunnels alluded to in his report at such opportunities as his other duties will permit, and that when that officer is satisfied the line can be opened without risk to the public, the restriction will be withdrawn.

With respect to the part of the Guildford and Farnham branch inspected, the Commissioners do not object to its being opened for public traffic, but they have directed me to request you to call the attention of the Directors of the Company to the recommendation made by Captain Laffan in the second paragraph of his report, and to express a hope that a strict watch will be maintained upon the embankment alluded to by him, and very moderate speeds enforced upon all trains passing over it.

I have, &c.,

H. D. HARNESS,

Capt. Royal Engineers.

The Secretary of the
London and South Western Railway Company.

Office of Commissioners of Railways, Whitehall,
August 20, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways, with reference to your report of the 17th instant, to request you to continue the inspection of the tunnels alluded to therein at such opportunity as your other duties will allow, and to report to the Commissioners when in your opinion the restriction which they have at present placed upon the opening of the line between Guildford and Shalford, by postponing it for one month from the 18th instant, may be withdrawn, or when a further postponement may be necessary.

I have, &c.,

H. D. HARNESS,

Capt. Royal Engineers.

Capt. Laffan, R.E.,
&c. &c.

Railway Commissioners' Office,
August 29, 1849.

SIR,

I HAVE the honour to report to you, for the information of the Commissioners, that on Friday last I re-inspected the portion of the Godalming branch of the London and South Western Railway, extending from the Guildford station to the junction of the Reading, Guildford, Dorking, and Reigate Railway at Shalford.

There are only two bridges on this portion of the Godalming branch, and both are over-bridges; they consist of brick arches of an elliptical form, very flat at the crown. One of them gave way a short time after it was built, and a considerable portion of it was rebuilt in cement. I have no reason to believe from any appearance in the work that the arch is likely to give way again.

The tunnels, however, are the works which chiefly attract attention. In my report to you, dated the 17th instant, I described the appearance of these tunnels, and the evident alteration of form which the arch had in many places undergone. I also reported that one portion of the work was defective, and would have to be removed. I have now to report to you, that on my re-inspection of the line on Friday last, I found that the defective work had been taken away, and rebuilt in cement, and that this had been done in a proper and workman-like manner. On going again carefully over both tunnels, I could not find any other spot where there was any appearance of the material giving way.

The irregularities in the form of the arch, however, are so great that, till I receive some definite information as to them in which they occurred, it will be impossible for me to estimate their effect upon the stability of the work. In forming such an opinion, I should be much guided by having before me a correct history of the progress of these works, of the observations that had been made on the changes of form in the arch while the mortar was still soft, and of several accidents which occurred, sometimes bringing down a considerable length of the roof.

I understand that a report upon these tunnels, giving much of the information which I desire, has been furnished by the engineer to this railway to the Directors; and I beg to suggest, that application be made to the Company to furnish me with a copy of that report. If that document affords a satisfactory explanation of the great irregularities in the appearance of these works, I shall no longer have any reason to believe that they are at present unsafe.

I have, &c.,

R. M. LAFFAN,

Capt. Royal Engineers.

Capt. Harness, R.E.,
&c. &c.

Railway Commissioners' Office,
September 17, 1849.

SIR,

I HAVE the honour to report to you, for the information of the Commissioners, that I this day re-inspected the portion of the Godalming branch of the South Western Railway,

G

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 London and South
 Western Railway.
 (Guildford,
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 Branches.)

extending from Guildford to the junction of the Reading, Guildford, Dorking, and Reigate Railway at Shalford.

In my report to you of the 29th ultimo, I stated that the defective portion of the brickwork of the tunnel had been rebuilt, and that I could not find any other spot in the work where there was any appearance of the material giving way; but that at the same time the irregularities in the form of the arch were so great, that till I received some definite information as to the manner in which they occurred, it would be impossible for me to estimate their effect upon the stability of the work. I requested also that application might be made to the Company for a copy of a report, which Mr. Locke, the chief engineer to the Company, had informed me he had himself addressed to the Directors on the subject of these tunnels, and which, he informed me, would give me much of the information I had in vain endeavoured to extract from the vague verbal communications of the assistant-engineer and others actually employed in the construction of the works.

The letter you have forwarded to me, and which I herewith return—from the Secretary of the Company—if I understand it aright, denies the existence of the document to which I referred. I have, therefore, only to state, that on examining the tunnel this morning, I saw no symptoms of any part of the material giving way; and that, under such circumstances, though there be great irregularities in the form of the arch, I still cannot report that the opening would be attended with danger to the public, for the arch, though very irregular, may still be everywhere sound.

Being, therefore, unable to report that the opening would be attended with danger to the public, I presume that permission will be given to the Company to open. I would, therefore, suggest that the Company be requested to instruct the engineers to keep a careful watch over the tunnels on this portion of the line, and to make accurate periodical inspections for a certain time, till it is ascertained that the whole has arrived at a perfectly firm bearing; and that there is no further movement or settlement of any kind.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

R. M. LAFFAN,
 Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
 September 20, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you that the report made to them by Captain Laffan, after his re-inspection on the 17th instant of that portion of the Godalming Branch Railway between Guildford and Shalford, does not state in express terms that the opening of the line for traffic would be attended with danger to the public safety, and that consequently they have not the power to postpone such opening under the provisions of the Act; but the Commissioners are by no means satisfied with the report they have received of the condition of this railway, and must therefore leave to the Company the responsibility of opening the line for public traffic, without expressing on their part any approval thereof.

If, under these circumstances, the Directors of the Company should nevertheless decide to open the railway, the Commissioners trust they will attend to the following observations extracted from Captain Laffan's report:—

"I would therefore suggest that the Company be requested to instruct their engineers to keep a careful watch over the tunnels on this portion of the line, and to make accurate periodical inspections for a certain time, till it is ascertained that the whole has arrived at a perfectly firm bearing, and that there is no further movement or settlement of any kind."

I have, &c.,

The Secretary of the
 London and South Western Railway Company.

H. D. HARNESS,
 Capt. Royal Engineers.

Railway Commissioners' Office,
 October 29, 1849.

SIR,

I HAVE the honour to report to you, for the information of the Commissioners, that, in compliance with the instructions conveyed to me in your letter of the 24th instant, I inspected, on Saturday last, the 27th instant, the Guildford tunnel on the Godalming branch of the London and South Western Railway.

On my arrival, I found that the partial injury to the roof of the tunnel had already been repaired, and that the work was closed; but I obtained a history of what had occurred from the statements of the Company's resident engineer, and of the contractor's agents, and the workmen they had employed. Those statements were so consistent with one another, and agreed so well with the appearance of the new work, and of the few fragments of the old which I found upon the spot, that I have no reason to doubt their accuracy.

From the information I thus obtained, it appears that a partial failure of the arch of the tunnel took place on Monday the 22nd instant.

At 11 o'clock on the morning of that day one of the plate-layers employed in the tunnel reported to the resident engineer that about half-way through it he had heard the noise of bricks cracking, and that, on going to the spot, small fragments of broken brick had fallen upon him.

On examination, it was found that about the centre of the tunnel the brickwork of the arch was giving way. Since the work had been built the arch had settled considerably, and now, for a length of 27 feet, and a width varying from 4 to 8 feet, near where the flattened crown

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begins to curve into the haunches, the face of the arch on the south side had been forced down by the load above to the extent of 7 or 8 inches from the general outline, and along the centre of this ridge the bricks were cracked and broken, and some portions had already fallen out. Had not the promptest measures been taken, it is not improbable that the whole arch at this place might have come down. Fortunately, both materials and workmen were at hand: the traffic through the tunnel was immediately stopped; and centerings were put up under the part that appeared likely to fail.

The point where the work gave way in this instance is nearly in the centre of a length of 90 feet, which had fallen in at a former occasion, and had been rebuilt. At the time of my inspection of that portion of the Godalming branch, prior to its opening, I was informed by the Company's engineer of the previous failure of this part of the work, and of its having been rebuilt by his directions in cement. I understood him to say, that the arch, as rebuilt, was everywhere composed of not less than seven half-brick rings set in cement, and that, as an additional security, the bars (or beams of wood 14 inches square, which, placed longitudinally 14 inches apart, had been used to support the earth while the brickwork was in progress) had been left in, serving, perhaps, partly to sustain, and certainly more equally to distribute the load upon the arch. I understood him to say, that the brickwork had been carried up till it met the bars, and that consequently, while in no case was it less than seven half-bricks in thickness, in some places it was more.

It appears, however, either that I must have greatly misunderstood the meaning of the engineer, or that he was himself misinformed upon this point; for I now learn from the resident engineer and the contractor's agents and workmen, that, at the point where the arch gave way, there were only four half-brick rings under the bars, and that the remaining three half rings, making up the thickness of the brickwork, had been built in between the beams, wherever the space was not already occupied by the stretchers or pieces of scantling 8" x 6", which, placed 2' 6" apart between the bars, had served to keep those timbers in place.

It appears, then, from the information I now obtain, that instead of lying along the top of an arch composed of seven half-brick rings set in cement, and serving more equally to distribute the weight over it, these bars or beams of timber had been built into, and made to form part and parcel of the arch itself. This appears to me to have been an injudicious arrangement, for an arch thus composed partly of brickwork and partly of timber, cannot, in my opinion, be expected to possess either the strength or the durability of one formed of brickwork alone. Had I been aware, at the time of my inspection prior to the opening, of the mode of construction adopted, I should have reported that such opening would, in my opinion, have been attended with danger to the public, by reason of the faulty construction, and therefore incompleteness of this portion of the work. As it was, I was, as you will perceive by referring to my former reports, anything but satisfied with the appearance of the brickwork, and therefore endeavoured to procure from the Company's officers some definite information respecting the history of its construction, and the manner in which it was built; which definite information, however, I was unable, either by my personal application, or by an official request through the Commissioners, to procure.

On Monday, as soon as the failure was perceived, centerings were put in under the whole of the failing portion, supported at either side, and leaving a clear space in the centre of sufficient width to allow a train to pass. One line of rails was diverted through this opening, and lowered sufficiently to afford the necessary height, and the space between the ribs were boarded over so as to allow the bricklayers to work, yet prevent any fragments from falling upon the rails. These preparations having been completed on the Tuesday evening, on Wednesday morning the traffic through the tunnel was resumed, a man being appointed, whose special duty it was to accompany every train that passed through; thus rendering it impossible for two trains to meet.

Meantime the workmen proceeded partially to cut out the defective work. Both bricks and timber were cut out to a sufficient depth to allow of five half-brick rings in cement being inserted below them, the remainder of the timber, with its compartments of brickwork, being left in. The new work presents an irregular appearance; for the workmen have, to a certain extent, followed the protruding lines into which the old work had sunk.

I am informed that the Company's engineer has given directions to the resident engineer, and to the contractor's agents, to build a new arch inside this failing one, and that this new arch is to be of the thickness of two half-bricks at the crown, and at the sides, and considerably more at the haunches, to restore a uniformity of appearance to the curve. The new work is to be in cement, and to be joined in as well as circumstances will permit with the old.

I have said before that had I been aware, at the time of my inspection of this tunnel, prior to its opening, of the mode of construction adopted in rebuilding this length of 90 feet, I should have reported that, in my opinion, such opening would have been attended with danger to the public: I am of opinion that the passing of trains through it, as at present, is a source of danger to the public now. The portion, 27 feet in length, that has failed may be sufficiently supported by the centering; but I have no reason to doubt that the remainder of the length of 90 feet was rebuilt in the same way, and if so, there is nothing, in my opinion, to prevent its giving way too. Even supposing that any partial assistance the brickwork may derive from the timber enables the work to stand for a time, still it is well known that timber built thus into brickwork seldom lasts long, and on its decay, it appears to me, that the whole load will have to be borne by an arch only four half-bricks thick.

I do not think that the new work inserted beneath the failing portion of the old can be depended upon as giving security to that part of the tunnel; following to a considerable extent the defective lines into which that old work had been forced by the downward pressure, this

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new piece can scarcely be expected to afford an equal strength with those portions which have retained their proper curve. Neither do I think that entire reliance can be placed upon the additional arch, two half-bricks thick, which I understand is to be built. The old arch has already settled considerably, and the horizontal thrust increased by the great flattening of the crown has been so great, that, as we have seen, the material in one place has given way. It appears doubtful to me how far the thin new arch can be depended upon to relieve the upper work of any considerable portion of the strain. To render it at all effective, it will be necessary that the new work be joined in with the utmost care to the old.

I am of opinion that the mode of construction adopted in rebuilding this length of 90 feet is faulty in principle, and I do not place entire faith in the palliative measures proposed; I think it probable that the safest plan would be to cause the whole length of 90 feet to be taken down and rebuilt.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

P.S.—I annex to this report a section furnished me by the Company's engineer, showing the form of the tunnel at the time of my first inspection, prior to the opening. This section appears from the letter of reference (A), and the corresponding letter upon the longitudinal section, which was furnished with it, to have been taken about the middle of the length of 90 feet which was rebuilt, and may therefore be assumed to show the form of the arch at the place where it gave way. The red lines show the arch as constructed, and the full blue line, the settlement that had taken place when the section was taken by the resident engineer.

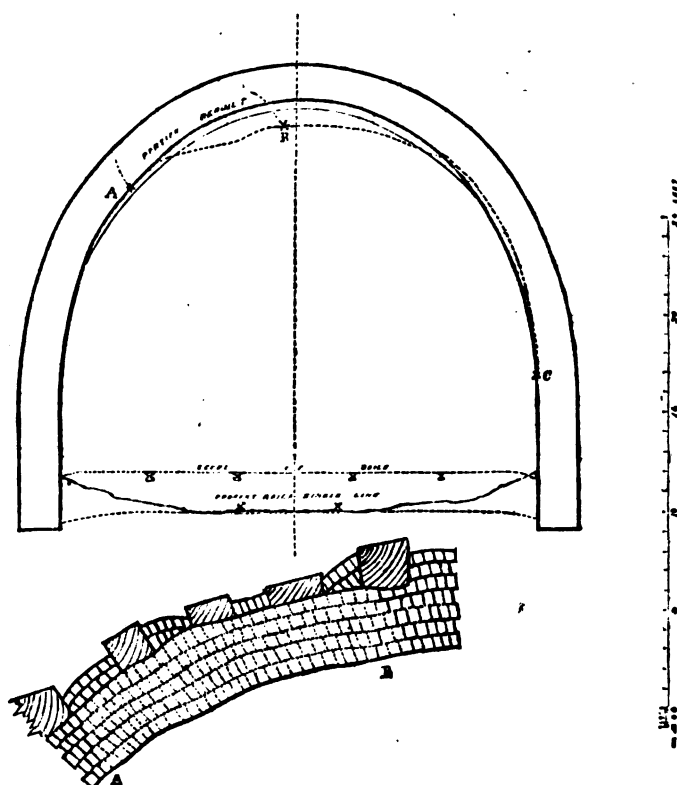
At the time of my second inspection of this work, prior to its being opened, I levelled myself a longitudinal section of the tunnel, from which it appeared that the arch here had settled one foot.

On the occasion of my late inspection, in compliance with the instructions contained in your letter of the 24th instant, I was so much struck with the form of the arch as now repaired, that I took very accurate measurements to enable me to lay down a correct cross-section of its present form; and in order to compare this with the section furnished me by the Company's engineer, I have assumed that in the interval between my levelling the longitudinal section and my late visit, no further settlement had taken place in the crown of the arch, and that the disturbance of form had been confined to the place that gave way. I have reason to believe that this assumption is correct; for, on laying down the new section, I find that at the places where the pressure was lightest, the curve given by my late measurements coincides exactly with the original curve shown by the red lines. At the crown, however, and particularly at the place that has been rebuilt, it will be seen by the dotted lines that the present form of the arch departs materially from the form as constructed; and it will also be seen, that on the side that did not give way, the haunch of the arch has been thrust slightly back.

I have appended an enlarged section of the arch at the place where the new work occurs, in order to show how it has been inserted beneath the old; the lower line showing the arch is taken from measurement, and I have drawn five rings of brickwork following the arch line, that being the number of courses I am informed have been built. Above I have shown the old timber and brickwork, exactly as my informants at Guildford described it to have been left in.

Section showing the Chalk Tunnel as actually executed, August, 1849.

MEMORANDUM.—The dark lines show the curve as constructed. The thin line the settlement in August, 1849. The dotted line shows the curve as repaired in October, 1849.



APPENDIX No 31.

Appendix No. 31.

LONDON AND NORTH WESTERN RAILWAY.

London and North
Western Railway.
(Cooper Bridge
Branch.)

SIR,

August 17, 1849.

I HAVE the honour to report, for the information of the Commissioners, that I yesterday inspected the Cooper Bridge Branch of the Huddersfield and Manchester Railway, which starts from the main line about three miles north of Huddersfield, and forms a fork to join the Lancashire and Yorkshire Railway in the direction of Manchester. Its length is 1 mile 20 chains.

The principal work on the line is a tunnel 132 yards long, made in open cutting, and afterwards filled in; the depth of earth on top is not more than four feet. It passes under a small village, and the junction of two roads, running very obliquely to the railway. The tunnel is built of pierre points, set in mortar, and has every appearance of being well constructed.

There are four bridges over the railway, and one under it, all built of pierre points. The permanent way, which is laid double, and in every respect similar to the other parts of the line, I found in good order.

No signals have yet been put up at either end of the branch; I must therefore report that, from the incompleteness of the branch in respect to signals, I am of opinion that it cannot be opened with safety to the public using the same.

I have to notice one deviation beyond the Parliamentary limits, in the substitution of a curve of 23 chains' radius for a length of 18 chains', for one of 40 chains' radius. It was stated to me to have been made in order to avoid interfering with a reservoir.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

Huddersfield, Sept. 27, 1849.

I HAVE the honour to report, for the information of the Commissioners, that I have just re-inspected the Cooper Bridge Branch of the London and North Western Railway Company, and I find that the point which I reported on as incomplete in my former inspection, viz., the want of signals at either end of the branch, has now been remedied.

At the Bradley Junction two semaphore station signals have been erected, as well as distance signals up and down the main line, and one up the branch, which are all worked from the same point. These signals, at the time of my inspection, were not quite completed; the posts were all up, with the exception of the one up the branch, which was in progress of erection, and the wires and apparatus for working them had to be put up. Everything was on the ground, and with moderate exertion all may be completed by an early hour to-morrow.

The signals at the Cooper Bridge Junction were quite complete; they consist of distance-signals up and down the main line, and a distance-signal up the branch, all worked, as well as the points, from the same point.

An improved description of signal lamp, of Mr. Cutt's invention, has been put up at the Bradley Junction. The improvement consists in substituting coloured glasses, which slide up and down between the lens and the lamp on opposite sides. The lamp, instead of revolving, is fixed, and one lamp, therefore, serves for both lines, thereby saving the first cost of the lamp, and annual cost of lighting it. The apparatus for raising the slides is connected with that for working the arms of the semaphore, so that the same operation works both lamp and signals.

I am of opinion that the line may be safely opened for the conveyance of passengers at the time proposed by the Company in their notice, viz., the 1st of October.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.GEORGE WYNNE,
Capt. Royal Engineers.

APPENDIX No. 32.

Appendix No. 32.

DUBLIN AND BELFAST JUNCTION RAILWAY.

Dublin and Belfast
Junction Railway.

SIR,

August 24, 1849.

I HAVE the honour to report, for the information of the Commissioners, that I yesterday inspected the Navan Branch Railway of the Dublin and Belfast Junction Railway, which branch commences on the Dublin and Drogheda Railway, about 25 chains from the Drogheda Terminus, and extends to Navan, where for the present it terminates: its length is 17 miles 17 chains.

At the moment I was starting from Dublin to proceed to the inspection of this railway, the accompanying letter from the Secretary of the Dublin and Drogheda Railway Company, enclosing the Act of Parliament authorizing the sale of the Navan branch to the Dublin and Drogheda Railway Company was placed in my hands, and my attention was particularly called to certain clauses of the Act marked in ink by the Secretary; both of these documents I now forward. The permanent way is laid single throughout, but all the works are calculated for a double line of rails; and the "way" is so far prepared for this second line, that a stone pitching of from 8 to 9 inches deep is laid to receive it, with the exception of about 55 chains,

Appendix No. 32.
Dublin and Belfast
Junction Railway.

which is through a rock cutting; on this pitching a coating of sand or broken stone is laid, on which the sleepers are bedded; this coating is partially laid, but not to a great extent. The slopes of the cuttings and embankments are in very good order; the only part of them which requires any dressing back and trimming up is through a rock cutting 2 miles 44 chains from the fixed point; the sides of this cutting are nearly perpendicular, and in some parts 36 feet high; the earth on the top of the rock requires in some places to be dressed back, and some trimming off of stones likely to become loose from the action of the weather; there is nothing more, however, required than the usual trimming, which is carried on for some time after a new line is opened; there is likewise sufficient provisions through all the cuttings for drainage. There are 44 bridges over and under the railway, which are all substantially built and completed, with the exception of two or three which had some small portions of their parapet walls remaining to be finished, the stones for which are ready dressed and on the ground; the post and rail fencing of one over-bridge was not up, two of the under-bridges of the respective spans of 40 feet and 41 feet 6 inches, had cast-iron lattice girders; their deflections with an engine on the centre were three-eighths of an inch and half an inch, which, in my opinion, is a sufficient degree of rigidity for the span.

There are no turn-tables as yet put up at either end; at the Drogheda end a turn-table is not required, as the trains are all to work into the Drogheda Terminus, where there is one; but at Navan one will be necessary: in the mean time there is a siding there into which the engine will be turned while the train proceeds to the station, and the engine can then get in front of the train, tender foremost, to take it back to Drogheda: this may be permitted as a temporary measure, caution and a moderate speed being used. There are signals at each end of the branch; the one at the Navan end is on the ground but not yet up; the signal at the junction is a high pole, on which a ball is hoisted to signify when the branch train may proceed, and, at the same time, to stop the main line, and *vice versa*; the signal therefore signifies one thing for one line and a different thing for the other;* this may lead to confusion, and I would recommend separate signal-posts being erected for the main line and the branch; but as a temporary measure it may be permitted; and it would be proper precaution to tell off one engine-driver exclusively for the branch while the signal with a double meaning is permitted to exist.

That is—ball up—
proceed branch,
stop main line;
ball down—proceed
main line, stop
branch.

I am of opinion that the branch line may be safely opened for the conveyance of passengers.

In giving this opinion, I give it as one involving only the safety of the public using the railway, without entering into the question as to how far it may be in a sufficiently complete state to hand over to another Company, according to the clauses of the Act authorizing the sale; but I have stated the general condition of the works on which the Commissioners, if necessary, may form an opinion.

There is one level crossing of a public road at 11 miles 68 chains, which is not authorized by the special Act; the gates shut across the road, but there is no provision made for the accommodation of a gate-keeper. There are no intermediate stations. The platform at the terminus is sufficiently completed for the safe ingress and egress to and from the carriages.

Since writing the above I have been again over the line, and find the signal at Navan has been put up. I should observe that there is no water-tank as yet erected at Navan; but one, I understand, is in preparation: there is a temporary tank half-way on the line, and as the distance between Drogheda and Navan is not 18 miles, the engine and tender can carry a sufficient charge to go and return.

The single line is sufficiently ballasted throughout.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Dublin and Drogheda Railway Company, Dublin Terminus,
August 23, 1849.

SIR,

HAVING been recently informed that you have been called on to inspect the Navan branch of the Dublin and Belfast Junction Railway Company, I have been instructed by the Directors of the Dublin and Drogheda Railway Company to send you the accompanying copy of the Act authorizing the sale of the Navan branch line of railway; and I have been requested to call your particular attention to Sections Nos. 1, 6, 9, 10, and 14 of said Act, by which you will observe that your duties as inspector of said branch line are not confined to the ordinary inspection of the same as being fit to be opened for public traffic, but are also extended to see and certify that the same is *finally completed*, according to the terms of said Act, as particularly referred to in the 9th and 14th sections thereof.

I am instructed to give you this intimation, not for the purpose of in any way embarrassing the Dublin and Belfast Junction Railway Company, but to guard you against giving a certificate (which, as I have been instructed, cannot at present be given consistently with the facts) that may cause any difference or litigation between the respective Companies hereafter; and I may therefore call your particular attention to the many unfinished portions of the works on the line, including the dressing of slopes, completion of fences, pitching, ballasting, and boxing, convenient and necessary sidings, platforms, water-tables, drainage, roads, accommodation, works, &c.

I have, &c.,

Captain Wynne, R.E.,
Inspector of Railways.

J. P. CULVERWELL, Secretary.

*Dublin and Drogheda Railway Company, Dublin Terminus,
August 23, 1849.*

Appendix No. 32.

Dublin and Belfast
Junction Railway.

SIR,

I AM desired by the Directors of this Company to enclose to you, for the information of the Commissioners of Railways, a copy of a letter which I have this day handed to Captain Wynne, and respectfully to request that the Commissioners of Railways will not grant a certificate that the Navan branch is completed and fit for public traffic until the officer appointed to inspect the line reports that the works are *finally completed*, according to the terms of the Act authorizing the sale of the Navan branch to this Company (a copy of which is enclosed), or until this Company is satisfied that the line is completed and fit to be opened for public traffic, as a certificate given sooner would prejudicially affect the rights of this Company.

I have, &c.,

*Capt. Harness, R.E.,
&c. &c.*

J. P. CULVERWELL, *Secretary.*

*Railway Office, 73, Talbot-street, Dublin,
August 25, 1849.*

SIR,

THE Dublin and Drogheda Railway Company having this day sent me a copy of their letter addressed to you on the 23rd instant, I have been directed to request you will inform the Commissioners of Railways that, if that letter shall in any way influence their opinion and impede their certifying that the Navan Branch Railway is fit to be opened for public traffic, as reported by their Inspecting Officer, the Directors request that they may be afforded an opportunity of forwarding such explanations on the contents of that letter as they may consider necessary.

I have, &c.,

*Capt. Harness, R.E.,
&c. &c.*

ROBERT ORR, *Secretary to the
Dublin and Belfast Junction Railway Company.*

*Office of Commissioners of Railways, Whitehall,
August 31, 1849.*

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 23rd instant, and to forward to you, in reply thereto, a copy of a letter addressed this day to the Dublin and Belfast Junction Railway Company, on the subject to which your communication refers.

I have, &c.,

*The Secretary to the
Dublin and Drogheda Railway Company.*

H. D. HARNESS,
Capt. Royal Engineers.

*Office of Commissioners of Railways, Whitehall,
August 31, 1849.*

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 25th instant, and to inform you that as Capt. Wynne, the officer who recently inspected the Navan Branch Railway, has not reported the line to be "completed" within the meaning of the 14th section of the Act 10 and 11 Vict., c. 111; but has reported that the line may be opened with safety to the public. The Commissioners, before they give their sanction to the opening of the line, and in order to avoid disputes and litigation between the respective Companies, are desirous to receive any explanation the Dublin and Belfast Junction Railway Company have to offer, as suggested in your communication. The Commissioners are also desirous to call the attention of the Company to the provisions of the 48th section of the Act above referred to, which have not yet been complied with.

I have, &c.,

*To the Secretary of the
Dublin and Belfast Junction Railway Company.*

H. D. HARNESS,
Capt. Royal Engineers.

*Railway Office, 73, Talbot-street, Dublin,
September 1, 1849.*

SIR,

HAVING just received your favour of the 31st ult., informing me that Capt. Wynne has reported that the Navan Branch Railway may be opened with safety to the public, but that it is not completed within the meaning of the 14th section of the Act 10 and 11 Vict., cap. 111, I have to request you will have the goodness to inform me of the particular works which Capt. Wynne considers should be completed so as to bring the railway within the meaning of the Act referred to. The Board wish to complete it fully, and with the least possible delay; when, if it shall be considered necessary, a fresh inspection of the railway can be held.

I shall, therefore, feel obliged by your favouring me with an early reply, and by your informing me what proofs are required by the Commissioners, of the purchasing and selling Companies having complied with the provisions of the 48th section of the said Act.

I have, &c.,

*Capt. Harness, R.E.,
&c. &c.*

ROBERT ORR, *Secretary to the
Dublin and Belfast Junction Railway Company.*

Appendix No. 32.

Dublin and Belfast
Junction Railway.

SIR,

*Office of Commissioners of Railways, Whitehall,
September 5, 1849.*

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 1st instant, and to inform you, in reply thereto, that Capt. Wynne, the officer who inspected the Navan Branch Railway, will be requested to prepare a report stating particularly the portions of the line and works which require completion; and that a copy of that report will be transmitted to the Company.

I am also to inform you that the first evidence which the Commissioners will require, that the provisions of the 48th section of the Act 10 and 11 Vict., cap. 111, have been complied with, will be a statement from each of the Companies interested, showing distinctly the powers the Company has received from Parliament to raise capital, the shares created under those powers, the several calls made upon those shares, and the amount received upon each call; and also under the several heads in which the accounts are rendered to the shareholders, the expenditure which has been made on capital account; the perfect accuracy of each statement being testified by a formal certificate at the end thereof, signed by the chairman, secretary, and auditors, and under the seal of the Company to which it relates.

I have, &c.,

*The Secretary to the**Dublin and Belfast Junction Railway Company.*

H. D. HARNESS,

Capt. Royal Engineers.

SIR,

Whitehall, September 6, 1849.

IN obedience to the Minute of the Commissioners, directing me to prepare a Report, stating particularly the portion of the line and works of the Navan branch of the Belfast Junction Railway that require completion, I would first beg to repeat, that as far as the public is concerned, the single line might be opened with safety, the works yet remaining to be done being of a nature that would admit of their being carried on simultaneously with the working of the line; but as the Act of the 10 and 11 Vic., c. 111, authorizing the sale, requires that the railway, as far as the one line is concerned, should be in a completely finished state, I will proceed to particularize the several points which remained unfinished at the time of my inspection.

The first unfinished portion occurred at 2 miles 44 chains from the fixed point, where the line passes through a rock-cutting, the sides of which are nearly perpendicular, and in some parts 36 feet deep, portions of the top of the cutting being through earth required dressing back, and a party of workmen were engaged at this operation; parts of the face of the rock here and there appeared of a character that might fall in under the influence of weather, and should be removed.

About one-half of the line only could be said to be fully ballasted, that part of the ballasting commonly designated as the "boxing up" being deficient on the other half.

Small portions of the parapets of several of the bridges were unfinished, but the stone required for their completion was lying ready dressed on the ground.

The post-and-rail fencing of one of the over-bridges was not up, and I should say that about an aggregate of 10 chains of the general fencing of different parts of the line yet remained to be finished.

The platform at the terminus was in progress, between 200 and 300 feet of it remaining to be completed.

The station-house was roofed in, but the interior fittings incomplete; the terminus was deficient in two important particulars, viz., a turn-table and a water crane, with a tank and the necessary machinery for supplying water.

A siding, 200 feet long, had been completed, and was in progress of being extended 300 feet further; the 6th clause of the Act requires, that "all convenient and necessary sidings shall be laid," but without knowing the probable amount of traffic, and the proposed arrangements for working it, it would not be possible for me to say what length of siding might be included under this head; but I have no hesitation in saying that a siding only 200 feet long, and that not a through one, cannot be considered a convenient one for even a very small amount of traffic.

The signal arrangements at the junction I consider only as a temporary expedient requiring to be worked under the restrictions named in my inspectional Report; the permanent signals should be of the same description as those used on other parts of the Drogheda line, one signal-post being placed on the main line at the junction, and another some way up the branch, both signals to be under the charge of the same man, the branch signal being worked by means of a wire.

The 6th clause of the Act also requires, that the Belfast Junction Railway Company shall "complete the construction of such branch railway as for two sets of rails, and shall lay down one of such sets of rails." The engineering view of this clause I conceive to be, that the permanent way of a single line of rails is to be completed, and the formation level and bridges to be of such a width as to admit a second line of rails being laid whenever it might be found convenient to do so; if this view is the correct one, this clause of the Act has been complied with; but if it means that the permanent way of the second line is to be completed, with the exception only of laying down the rails, then much remains to be done, as of the permanent

way for the second line only about one-half can be said to be fully ballasted, and none of the sleepers are laid. Appendix No. 32.

I believe that I have now stated all that required completion at the time I inspected the line. Dublin and Belfast Junction Railway.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

Office of Commissioners of Railways, Whitehall,
September 8, 1849.

I HAVE been directed by the Commissioners of Railways, with reference to the letter from this office of the 5th inst., to forward to you the enclosed copy of the report made to them by Captain Wynne, as to the portions of the works of the Navan Branch Railway which require completion, and to inform you, that when the works therein mentioned as incomplete have been finished, the Commissioners will consider whether they can grant their certificate before the preparations for the second line of rails are in a more forward state than at present.

I have, &c.,

The Secretary of the
Dublin and Belfast Junction Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

Railway Office, 73, Talbot-street, Dublin,
December 8, 1849.

I AM desired to inform you that the Navan Branch Railway is now completed on the terms of the agreement with the Dublin and Drogheda Railway Company, and to request that the Commissioners of Railways will order it to be inspected by their officer at their earliest convenience.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

JNO. BLOOD,
Secretary.

SIR,

Dublin, December 18, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that on the 15th inst. I re-inspected the Navan Branch of the Belfast Junction Railway, and, in reference to my letter to the Commissioners, of the 6th September, in which I particularized the works requiring completion under the Act of the 10 and 11 Vic., c. 111, authorizing the sale of this railway to the Dublin and Drogheda Railway Company, I have to report that,

1st. The unfinished portion at 2 miles 44 chains from the fixed point is completed.

2nd. The ballasting of the single line is finished.

3rd. The parapets of the several bridges are finished.

4th. The fencing is complete.

5th. The platform and station-house at the terminus are completed, and the siding has been extended about 300 feet further, and for all purpose of passenger traffic the siding now appears to be sufficient; it has yet, however, to be connected with the turn-table, which has been erected since my last inspection, with which also the main line has to be connected.

Convenient goods-sheds have been put up; but the rails to them have not yet been laid.

The signal arrangements which I suggested for the junction have been put up and completed.

A water-tank, with all the necessary machinery, has been put up at the terminus.

On my former inspection, I found that about one-half of the formation level for the second line of rails required to be ballasted; on this portion has now been laid about one foot in depth of stone pitching and gravel, and, as this is not sufficient in quantity, I must (if the ballasting of the second line is considered necessary under the Act) report that this part of the line is still incomplete. But whenever the main line and siding at the terminus are connected with the turn-table, the single line, in my opinion, will then be completed, and fit to be opened for public traffic.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

Office of Commissioners of Railways, Whitehall,
December 21, 1849.

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Captain Wynne's report of his re-inspection of the Navan Branch of the Dublin and Belfast Junction Railway.

I have, &c.,

The Secretary of the
Dublin and Belfast Junction Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

Appendix No. 32.
 —
 Dublin and Belfast
 Junction Railway.

SIR,

*Dublin and Drogheda Railway Company,
 December 31, 1849.*

THE Belfast Junction Company having handed to us a copy of a report made by Captain Wynne, to the Commissioners of Railways, dated the 18th instant, in which Captain Wynne states that the Navan Branch of the Belfast Junction Company is ready for opening, with the exception of certain items therein specified, and this Company having made an arrangement with the Belfast Junction Company, to the effect that the non-completing of said items shall not be urged as an objection to the granting of a certificate of the branch being completed in the terms of the Act, I am instructed by the Directors of the Dublin and Drogheda Railway Company to request that a final certificate of the completion of the Navan Branch may be given by the Commissioners of Railways to the Belfast Junction Company, so that the line may be opened without any further delay.

I have, &c.,

*Capt. Harness, R.E.,
 &c. &c.*

*J. P. CULVERWELL,
 Secretary.*

*Office of Commissioners of Railways, Whitehall,
 January 2, 1850.*

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 31st ultimo, and to inform you, in reply, that they have sometime since expressed their opinion that there was no objection to the opening of the Navan Branch Railway for the purposes of public traffic; but, that until all the works are fully completed in the manner pointed out by Captain Wynne in his report, a certificate of completion that will compel the Dublin and Drogheda Railway Company to take the line cannot be granted, as the Commissioners are bound strictly to comply with the provisions of the Act.

I have, &c.,

*The Secretary of the
 Dublin and Drogheda Railway Company.*

*H. D. HARNESSE,
 Capt. Royal Engineers.*

*Dublin and Drogheda Railway Company,
 January 14, 1850.*

SIR,

I AM instructed by the Directors of the Dublin and Drogheda Railway Company to acquaint you, for the information of the Commissioners of Railways, that the Navan Branch Line is now complete, so far as the Dublin and Belfast Junction are bound to complete it, and to request that the final certificate may be issued without loss of time.

I have, &c.,

*Capt. Harness, R.E.,
 &c. &c.*

*J. P. CULVERWELL,
 Secretary.*

*Railway Office, 73, Talbot-street, Dublin,
 January 14, 1850.*

SIR,

I AM directed by the Directors of the Dublin and Belfast Junction Railway Company to inform you that the Navan Branch Line is now complete, so far as this Company are bound to complete it, and request that the final certificate may be issued without loss of time.

I have, &c.,

*Capt. Harness, R.E.,
 &c. &c.*

JNO. BLOOD, Secretary.

*Office of Commissioners of Railways, Whitehall,
 January 16, 1850.*

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 14th instant, stating that the Navan Branch is complete, and to inform you that an officer of this department will be appointed to inspect the line in question.

I have, &c.,

*The Secretary of the
 Dublin and Belfast Junction and Dublin and
 Drogheda Railway Company.*

*H. D. HARNESSE,
 Capt. Royal Engineers.*

*Railway Office, 73, Talbot-street, Dublin,
 January 19, 1850.*

SIR,

I AM instructed by the Directors of the Dublin and Belfast Junction Railway Company to acknowledge the receipt of your letter of the 16th instant, informing the Directors that an officer of the Commissioners of Railways will be appointed to inspect the line in question; and I am further directed to acquaint you that Captain Wynne having some time since reported that the line was perfectly safe to be opened for public traffic, and all the works which the Drogheda Railway Company required to have executed, having been fully done to the satisfaction of that Company, it is a matter of great importance to both Companies that the con-

veyance should be executed from the Dublin and Belfast Junction Company with the least possible delay; and with a view to affording satisfaction to the Commissioners, Mr. Murland, the Deputy Chairman of the Drogheda Company, has undertaken to proceed to London, where he hopes to arrive on Monday next; and the Directors of the Company have fully apprized him of their views, which he will submit to the Commissioners, and trust that the Commissioners will feel that as all works on the Navan Branch Line are completed so far as this Company is bound to complete them, no further difficulty will be felt by the Commissioners in granting the required certificate.

Appendix No. 32.
Dublin and Belfast
Junction Railway.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

JNO. BLOOD, *Secretary.*

APPENDIX No. 33.

SOUTH YORKSHIRE, DONCASTER, AND GOOLE RAILWAY.

Appendix No. 33.
South Yorkshire,
Doncaster, and
Goole Railway.

SIR,

September 7, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that I proceeded yesterday to Doncaster, for the purpose of inspecting the South Yorkshire, Doncaster, and Goole Railway, between that town and Swinton. The same evening I was waited upon by Mr. Bartholomew, the resident engineer of the line, who informed me that, on the preceding day, an embankment, close to a bridge over the Don, had sunk about 8 feet, and had carried with it part of the wing-wall of one of the abutments; and that the opening of the line was in consequence postponed till the 24th. I informed him that it would be necessary for me, notwithstanding, to see what had occurred, and report thereon; I accordingly proceeded this morning with Mr. Bartholomew. The embankment which has sunk leads to a bridge which crosses the Don at a very oblique angle; the north side of the embankment, for a short distance, runs close along the river, and the ground there, from the action of the water, being soft, it has caused the bank to sink about 8 feet, which has forced out the wing-wall: the subsidence of the embankment being lateral, and not endwise, has left the abutment, which is on a piled foundation, uninjured. Mr. Bartholomew proposes to relieve the pressure on the ground, by reducing the height of the embankment, and approaching the bridge by means of a timber gearing.

The permanent way in consequence of this accident being incomplete, I have to report that from this cause the railway cannot be opened without danger to the public using the same.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEO. WYNNE,
Capt. Royal Engineers.

SIR,

Normanton, October 31, 1849.

I HAVE to report, for the information of the Commissioners, that I have this day inspected the South Yorkshire Railway, from its junction with the Midland near Swinton Station to its junction with the Great Northern at Doncaster, a length of 7 miles 56 chains.

I found all the works completed, the permanent way fully ballasted, the signals up, and platforms finished.

There is one part of the line, 5 miles 15 chains from the fixed point, in a deep cutting, through magnesian limestone; the cutting commences in the face of a long line of cliff, formed of this rock, which stands perpendicularly about 70 feet in height; the rock presents a most shattered appearance, being cut up with innumerable vertical fissures, presenting somewhat the appearance of a very badly-built dry wall; and it appears surprising that it should stand with a vertical face, but which it nevertheless does. The cutting is 76 chains in length, and the first 20 chains presents the shattered appearance I have described; after which the rock is of a less broken character. The sides at the commencement are 69 feet high, and throughout stand nearly perpendicular. It was stated to me that this part had been executed a year, and that the weather had in no way affected it, and the appearance of the cliffs outside being exactly the same, and weather-stained, would seem to bear out the statement. The danger which appears to me to exist is not from large masses coming down, but detached stones here and there, which, getting on the rails, might throw a train off; this danger, I think, may be avoided by a careful system of watching, and what I proposed to Mr. Bartholomew, the engineer, was that a man, who could be depended upon, should be put to watch the first 20 chains of the cutting, which is, I consider, the only dangerous part; that he should have a box in the centre of this part from whence wires should extend up and down the line to distance signals; and that it should be his duty a short time before the passage of every train to walk through the cutting, and if there should be any appearance of danger, to stop the line by means of his signals: this mode of watching will, I think, offer every security until time shall have established the security of the sides.

There are some deviations in the levels, and also in the direction of the line beyond the Parliamentary limit, which I shall bring under notice of the Commissioners in a future report, the deviation in direction involves three level crossings of public roads, which of course cannot have received Parliamentary sanction. There is one other level crossing of a turnpike-road,

Appendix No. 33. at 2 miles 10 chains, in the parish of Mexborough, which it was stated to me was sanctioned by the Special Act.

South Yorkshire, The rock cutting being watched as I propose, I am of opinion that the line may be opened with safety for the conveyance of passengers.

Doncaster, and
Goole Railway.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

December 3, 1849.

IN reference to the deviations beyond the Parliamentary limits on the South Yorkshire Railway, alluded to in my Report of the 31st October, I beg now more particularly to specify them:—

At 14 miles 55 chains from the fixed point the direction of the line is deviated about half a mile from that shown on the Parliamentary plan for a length of 1 mile 21 chains; this deviation involves the crossing on the level of three public roads at the following points, viz.:—

Miles.	Chains.
At 15	9
„ 15	31
„ 15	70

none of which crossings have received Parliamentary sanction.

It also involves the introduction of a curve of 15 and 24 chains' radius, at its junction with the Great Northern. At 10 miles 50 chains a gradient of 1 in 300 has been substituted for 1 in 911, extending 55 chains.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 34.

Leeds and Thirsk
Railway.

APPENDIX No. 34.

LEEDS AND THIRSK.

SIR,

September 18, 1849.

I BEG to lay before the Commissioners a report more in detail of my inspection of the Leeds and Thirsk line between Leeds and Weeton than the one which I had the honour to forward to you on the 8th of July.

The line commences at Leeds, from a junction with the Leeds and Dewsbury line of the London and North Western Railway: the point of junction is on the viaduct which crosses the River Aire and the Leeds and Liverpool Canal, 29 chains from the centre of the Leeds station; the line leaves the Leeds and Dewsbury with a descending gradient of 1 in 96 for a length of 13·84 chains, which is succeeded by a short level portion 1·36 chains long; it then ascends for 133·5 chains at gradients of 1 in 300, 1 in 255, 1 in 232, 1 in 137, and 1 in 104, when there is a long ascent of 1 in 100 for 304·3 chains, at which point the line reaches its summit, 269 feet 4 inches above the point from whence it started; the descent is then about as rapid, viz., 1 in 400 for 28·18 chains, 1 in 93·9 for 236·86 chains, 1 in 129·5 for 19·55 chains; then a level portion for 57·53 chains; and, lastly, an ascending gradient of 1 in 165 for 81·82 chains.

The earthworks, masonry, and tunnelling on the line are very heavy.

The cubical content of the embankments, the highest of which are 47, 51, 60, 61, and 70 feet, is about 1,600,000 yards.

The cubical content in the cuttings, the deepest of which are 47, 49, 60, and 126 feet, is about 1,600,000 yards.

There are 22 bridges over and under the railway; 5 of these are iron-girder bridges; the remainder are all built of block in coarse masonry, with cut-stone arches, and are all of a substantial character.

There are three viaducts, which are all built of solid ashlar up to the plinths, and ashlar and rubble above, and ashlar arches.

The first viaduct is at the junction, it consists of four segmental arches of 35 feet 6 inches span, and 11 feet rise; extreme height 36 feet. The second is over the River Aire: it consists of 22 segmental and 1 elliptical arch; the spans of the former are 48 feet with 15 feet rise; the span of the latter is 41 feet 6 inches, with 10 feet rise; the extreme height is 54 feet. The third is over the Wharfe river, and consists of 21 segmental arches of 60 feet span each, with 21 feet rise; the extreme height is 74 feet. The aggregate length of all of the viaducts is 982 yards, and they have every appearance of being constructed with great solidity and care; the stone used is a hard sand-stone, which is abundant in the district.

There are three tunnels.

The first, called St. Ann's Tunnel, is 70 yards in length; it is all of brick-work, set in cement

The second, which is a work of great magnitude, is called the Bramhope-tunnel, and is 3,763 yards in length; it is chiefly through shale and sand-stone rock; the arch is principally turned in pierre points; the side walls block in coarse masonry; the foundations, when not on the rock, are inverted; it is ventilated by four shafts, 40 feet by 30 feet internal diameter. In

parts it is extremely wet, and whenever this occurs the tunnel is lined with corrugated iron to carry the water off.

The third tunnel is through Wescoe-hill, and is entirely of brick-work, in cement, and is 100 yards in length; it is inverted throughout its length.

In the deep cuttings, on the Leeds side of the Bramhope-tunnel, retaining walls of great strength are built at the foot of the slopes, varying from 6 feet 6 inches to 16 feet in height, and in the latter case stone inverts extend across the railway.

The line is laid double throughout, and in all respects similar to other parts of the line described in previous Reports.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

GEORGE WYNNE,
Capt. Royal Engineers.

APPENDIX No. 35.

GLASGOW, DUMFRIES, AND CARLISLE RAILWAY.—(*Dumfries to Closeburn.*)

SIR,

Dumfries, September 24, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that I have just inspected the Glasgow, Dumfries, and Carlisle Railway from Dumfries to Closeburn, a distance of 12 miles.

I shall, in my Report, confine myself to those works which I found incomplete, reserving for another occasion a general report on the works of the line.

The signal arrangements throughout the line, viz., at Dumfries; at a level crossing, which occurs at 3 miles 60 chains from the fixed point, and which is to be used as a roadside station; at Killielung intermediate station; and at Closeburn, the terminal point are incomplete.

The north face of a small bridge, over a burn on the Kilpatrick bog, has settled, and will require to be taken down and rebuilt.

There is no turn-table at Closeburn, which would necessitate the engines returning tender foremost; neither is there any water-tank there, nor on any other part of the line, which might be the cause of much inconvenience; and there is no siding to turn the carriages or the engine into, and the fencing about the station is incomplete.

The porter's lodge at the level crossing is not above its foundations, and no temporary accommodation has been provided for the gate-keeper, and the Act specifies such should be provided; the gates shut across both the road and the railway.

On account of the incompleteness of these works which I have just enumerated, I am of opinion that the line from Dumfries to Closeburn cannot be opened for the conveyance of passengers without danger to the public using the same; and I recommend that the opening for the present may be deferred.

The postponement of the opening for a short time will have the advantage of allowing the contractor to finish off a number of small jobs at which he is engaged on different parts of the line, and allow it to open free from all possible obstruction.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

October 10, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that I have this day re-inspected the Glasgow, Dumfries, and Carlisle Railway from Dumfries to Closeburn; and I have to report that those works which I enumerated in my former inspectional report as being incomplete are now finished, and in my opinion the railway may be opened with safety for the conveyance of passengers.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

APPENDIX No. 36.

MIDLAND RAILWAY.—(*Kirkby Junction to Mansfield and Pinxton.*)

SIR,

Normanton, September 25, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that, in compliance with their instructions, I this day inspected the branch of the Midland Railway, extending from Kirkby Junction eastward to Mansfield, and from the same junction westward to Pinxton, which together formed the Mansfield and Pinxton Railway, a mineral line of old construction on the gauge of 4 feet 4 inches now converted, and adapted to the gauge of 4 feet 8½ inches. The former portion, eastward from Kirkby Junction (3½ miles in length), completes the railway from Nottingham to Mansfield. It is a double line, laid with old rails removed from the main line of the Midland Railway, which have been replaced by others of a heavier nature. They appear well adapted for a traffic which does not require the passage

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Leeds and Thirsk
Railway.

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Glasgow, Dumfries,
and Carlisle
Railway.
(*Dumfries to
Closeburn.*)

Appendix No. 36.

Midland Railway.
(*Kirkby Junction to
Mansfield and
Pinxton.*)

Appendix No. 36.
 Midland Railway.
 (Kirkby Junction to
 Mansfield and
 Pinxton.)

of heavy engines at high speeds. There is one intermediate station at Sutton in Ashfield, where the railway is crossed by a high road upon the level. At this station the signals were not erected, but I was informed that they were prepared. As at this station the level crossing cannot be seen from an engine approaching from Kirkby to any considerable distance, and the railway is on a descending gradient, I consider it absolutely necessary that it should be so fixed that it can be seen to a distance of at least 600 yards.

At another level crossing, called Sheep Ridge, but not at a station, about a mile from Mansfield, the same precaution will, I conceive, be absolutely necessary for the safety of the public using the road. Preparations had not been made for the erection of this latter signal. The railway has, I am informed, been used to a considerable extent as a thoroughfare during the many years upon which horses have been used as the tractive power; and near Mansfield I remarked that houses had been built close adjoining to and facing the railway, and having free access to it. It appears requisite for the safety of the residents, as well as for that of the traffic on the railway, that the openings in the fence walls or hedges should be permanently and securely closed, and all access to the railway cut off, except at properly appointed level crossings; and it will be advisable that moderate speeds only should be allowed, both on account of the old railway having been used as a thoroughfare and in consequence of the number of level crossings. I have therefore to report, that I am of opinion that in its present condition the opening of this portion of the railway from Kirkby to Mansfield will be attended with danger to the public using the same. When the above precautions shall have been adopted, I am not aware of anything to prevent it from being opened with safety for the conveyance of the public.

On the other portion which I inspected, from Kirkby Junction to Pinxton, $3\frac{1}{2}$ miles in length, I found that part of one of the lines was not laid, that there were several shifting rails, and incomplete junctions into coal-works, and that the gates at the level crossings were not erected; and I have therefore to report, that in my opinion the opening of the same will be attended with danger to the public using the said railway, by reason of the incompleteness of the works.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

J. L. A. SIMMONS,
 Capt. Royal Engineers.

SIR,

London, October 5, 1849.

I HAVE to report to you that, in compliance with the instructions contained in your letter of the 2nd inst., I communicated with the Midland Company, and yesterday re-inspected the Mansfield and Pinxton Branch between Kirkby and Mansfield, and found that the signals had been properly erected; and that temporary fencing of an effective character had been erected at those places where, on my previous inspection, I had considered it necessary, so as to prevent persons from having free access to the railway except at properly appointed level crossings; and that the gates or doors leading from such houses as fronted upon the railway were either chained up and locked or closed by planking. The engineer informed me that those arrangements, by which the persons inhabiting the houses are excluded from the railway, had been assented to by them, and would remain until a more permanent fence shall be constructed, as soon as it is ascertained in what way this can be done, so as to produce the least inconvenience to the parties interested. Under these circumstances, I see no objection to the opening of the railway for the convenience of the public, subject still to the remark that slow speeds and great care will always be requisite, both on account of the level crossings, with sharp curves and steep gradients, and because the terminal station is at the foot of a long and steep incline.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

J. L. A. SIMMONS,
 Capt. Royal Engineers.

Appendix No. 37.
 Aberdeen Railway.

APPENDIX No. 37.

ABERDEEN RAILWAY.

SIR,

Stirling, October 1, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that on my proceeding this morning to Montrose to inspect the Aberdeen Railway and the extension of the Montrose branch, I was informed by the Superintendent of the Aberdeen line that, owing to some unexpected delay in the execution of the works, they were not ready for my inspection. I received, also, at the same time a letter from Mr. Errington, the Company's engineer, to the same purport. I wished, nevertheless, to examine some portion of the line, in order to judge of its state of forwardness, but I was unable to proceed more than a few miles, being stopped by the unfinished state of the North Esk Viaduct. I beg to recommend that the opening of the main-line and Montrose branch be postponed, inasmuch as such opening would be at present attended with danger to the public, by reason of the incompleteness of the works, and of the permanent way.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

R. M. LAFFAN,
 Capt. Royal Engineers.

SIR,

Edinburgh, October 14, 1849.

Appendix No. 37.

Aberdeen Railway.

I HAVE the honour to acquaint you, for the information of the Commissioners, that on the 12th instant I inspected the Aberdeen Railway and the extension of the Montrose Branch; the former commences at the Dubton Station, and extends to Limpet Mill, a distance of 26 miles, and the latter extends into the town of Montrose, and is $1\frac{1}{4}$ mile in length.

I first inspected the Montrose Branch, and of it I have to report that I found it incomplete in the following particulars; two over-bridges were unfinished, the fencing was incomplete, and the arrangements for a terminal station, such as sheds, platforms, sidings, signals, and turntables, were not even commenced; I have therefore to state that, in my opinion, owing to the incompleteness of the works I have enumerated, the extension of the Montrose Branch cannot with safety be opened for the conveyance of passengers.

I have now to report upon the main line from Dubton Station to Limpet Mill: the first point to which I have to draw your attention is the Bervie Water Viaduct, which consists of two central laminated timber arches of 60 feet span, with 10 feet rise, and two stone side arches of 35 feet span, and 10 feet rise, four openings in all: the piers and abutments are of stone, in consequence of the contractor having commenced tipping the earth against the northern abutment whilst the masonry was in a green state, and at the same time striking the centres; the north arch sunk 3 inches at the crown, and the pier was forced $2\frac{1}{2}$ inches out of the perpendicular (the height of the pier to the impost being about 15 feet), and many of the stones throughout the inside face are cracked. As soon as the tendency of the arch to sink was observed, the centres were wedged up and still remain so. Mr. Errington proposes to keep in the centreing, which is strongly constructed, and to build interior buttresses and arches. It is probable that the viaduct, with the centreing left in, as proposed by Mr. Errington, would be unattended with danger; but as this cannot be considered as the permanent state of a railway structure of such importance, and as I am unable to form an opinion as to its permanency when in an unsupported state, I must decline stating that in its present state it is fit for public use.

At the north end of the Bervie Water Viaduct, about 1,400 yards of the down line has yet to be laid; points have been fixed at each end leading into the up line, and for this distance it is proposed to work the line as a single one, the precaution to be taken is, to have a travelling porter bearing a distinguishing mark, without whom no engine is to pass on to the single line; this precautionary measure being properly made known to the drivers, appears to me to be sufficient for the purpose of safety.

There are but two public road level crossings, which are both sanctioned by the Special Act.

The signals and platforms at the several stations on the line and at the terminus are complete, and with the exception of the viaduct over the Bervie Water, the line is in good order; but owing to the incompleteness of that work, the state of which I have described in another portion of my report, I must state that, in my opinion, the line cannot be opened with safety for the conveyance of passengers.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

*Office of Commissioners of Railways, Whitehall,
October 17, 1849.*

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Captain Wynne's report of his inspection of the Aberdeen Railway, from Dubton to Limpet Mill, and to inform you that, for the reasons stated therein, they have further postponed the opening of the line in question for the purposes of public traffic for one month from this date.

I have, &c.,

The Secretary of the
Aberdeen Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

*Morley's Hotel, Trafalgar Square, London,
October 22, 1849.*

SIR,

I HAD the honour to receive at Aberdeen your communication of the 17th instant, transmitting copy of Captain Wynne's report of his inspection of the Aberdeen Railway, from Dubton to Limpet Mill, and intimating that, for the reason stated in said report, the Commissioners had further postponed the opening of the line for the purposes of public traffic for one month.

Having submitted Captain's Wynne's report to the Directors of the Railway Company, I have been requested by them to recal the attention of the Commissioners to the terms of that report, with a view of obtaining their consent to the opening of the line, so far as not objected to.

Captain Wynne states that, "the signals and platforms at the several stations on the line and at the terminus are complete, and with the exception of the viaduct over the Bervie Water, the line is in good order," and the Directors therefore propose to open the part of the line reported on, exclusive of the Bervie Water Viaduct, and to postpone the opening of the viaduct until it shall be again examined.

Appendix No. 37. I beg, therefore, to crave the Commissioners to give permission for the immediate opening of the line for the purposes of public traffic with the exception of the Bervie Water Viaduct as above stated.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

GEO. KEITH, *Secretary.*

Office of Commissioners of Railways, Whitehall,
October 22, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of a letter from the Aberdeen Railway Company, and to request you to inform the Commissioners if, in your opinion, the public safety will be endangered by the Company's wishes being complied with.

I have, &c.,

Capt. Wynne, R.E.,
&c. &c.

H. D. HARNESSE,
Capt. Royal Engineers.

SIR,

Birmingham, October 24, 1849.

I HAVE the honour to acknowledge the receipt of your letter of the 22nd instant, enclosing a copy of a letter from the Aberdeen Railway Company, and requesting me to inform the Commissioners if, in my opinion, the public safety will be endangered by the Company's request being complied with:

I have, in reply, to state that, in my opinion, the line may be opened with safety to the public as proposed in the letter of the Aberdeen Railway Company, that is, with the exception of the Bervie Water Viaduct.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

Perth, November 6, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that I yesterday inspected the Bervie Water Viaduct on the Aberdeen Railway, which on my former inspection I was unable to report as being in a fit state to open for the public, owing to the centres of the two extreme arches not having been struck.

This viaduct has four openings; the two middle ones, of 60 feet span, have laminated timber arches, the two extreme ones, of 35 feet span, are of brick with ashlar facings; the rise is 10 feet in all of them; in consequence of the contractor having placed a great load of ballast on the brick arch at the northern end of the viaduct, without any countebalancing load on the timber arch, and in this state having removed the centres, the pier was thrown $2\frac{1}{2}$ inches out of the perpendicular at the top, and the arch sank 3 inches at the crown; the centres were again put in and bridged up; the timber arches were found to have risen 2 inches; this was the state in which I found the viaduct on my former inspection. The centres have now been struck, the ballast entirely removed from the brick arch, and the rails carried across on a timber framing, the load of ballast on the timber arch has been calculated to equilibrate with the reduced thrust of the brick arch. I carefully examined the soffit of the arch, and was unable to discern any crushing of the bricks or stone facing; the mortar is of a good quality, and there was no alteration in the pier since I last inspected it, neither was there any apparent alteration in the form of the arch. There appears to me, therefore, every reason to believe that the structure is in such a state of equilibrium and soundness as will ensure the public safety, and I am of opinion the viaduct may be opened for the conveyance of passengers across it.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 38.

Great Western
Railway.
(Windsor Branch.)

APPENDIX No. 38.

GREAT WESTERN RAILWAY—(Windsor Branch.)

SIR,

Whitehall, October 6, 1849.

I HAVE to report that, in compliance with the instructions contained in your letter of the 27th ult., I inspected the Windsor Branch of the Great Western Railway on the 2nd inst., and when I found that the line was in such an advanced state that it would be ready for opening before the expiration of the ten days' notice, but there being a large wrought-iron bridge over the river Thames, with a clear span of 187 feet, constructed in a somewhat novel manner, arrangements were made with Mr. Brunel to enable me to examine the drawings, and apply the test of passing weights over it on the 5th inst., when the permanent way would be completed, and the wrought-iron arches freed from the intermediate supports which had been placed

in the bed of the river temporarily during construction. I accordingly re-inspected the line yesterday, and made those examinations and trials of the bridge which I deemed necessary, and being satisfied therewith, I have to report that I am aware of nothing affecting the safety of the public to prevent the opening of the railway as desired by the Company.

A deviation has been made in the direction of the railway, by the reduction of the radius of a curve from 20 to 15 chains, which Mr. Brunel informed me was in compliance with a requirement of the Admiralty as to the position of the bridge over the river Thames. As this bridge is new in construction and design, the following short account will appear to be necessary to explain its nature:—

It consists of three wrought-iron arched ribs, with wrought-iron ties connecting the extremities, and therefore receiving the thrust of the arches, being of the form commonly known under the appellation of a *bowstring* bridge, having vertical rods or bars, with diagonal bracing, to connect the arch or bow with the tie. The total length is $213\frac{1}{2}$ feet, and rise of the arch, which is in the form of a segment of a circle, 25 feet. The arch is in the form of a nearly equilateral triangle (the side $3\frac{1}{2}$ feet), with the point downwards, constructed of boiler-plate iron, five-eighths inch in thickness, rivetted together, and having a vertical plate of the same material extending from the lower apex of the triangle to the opposite side. The plates are brought together, and so arranged with covering-plates at the joints that they lose no power of resistance to compression by the joints. The tie or string of the arch is 6 feet in height, in the form of the letter Π , the top and bottom flanges or plates being $\frac{1}{2}$ -inch thick, and the middle web a double thickness of $\frac{1}{2}$ -inch boiler-plate. These strings are well connected where the plates join by covering plates and rivets, and to the extremities of the arch, angle-iron being used where considered necessary to stiffen and strengthen the parts. The above dimensions apply to the outside arches or beams, plates of similar dimensions being doubled, to form the middle arch or beam, which is, therefore, nearly of double strength, having to afford support to both lines of rail, whereas the outside arches only yield support to one.

The central distance between these arches or beams is 14 feet, the roadway being carried on a wooden flooring, supported on wrought-iron cross girders rivetted to the upright web of the string or tie, just above its bottom flange or plate. The top of the arches, where their height is sufficiently great not to interfere with the engine chimneys in passing, are secured in their relative position by wrought-iron diagonal bracing, and the string or tie is well connected to the bow or arch by vertical ties and diagonal bracing, which effectually prevent any material alteration in the form of the arch in consequence of the position of the load.

The superstructure of the bridge so constructed rests upon a timber bed, fixed at one end, and free to move on rollers at the other, to allow for expansion and contraction by change of temperature, which beds are again carried on masses of concrete contained in cast-iron columns 6 feet in diameter, two at each end of each beam or arch.

These columns, one inch and one-eighth in thickness, cast in lengths of six feet, bolted together with inside flanges, have been sunk various depths into the ground, and several feet below the level of the bed of the river, by removing the gravel inside and allowing them to sink by their own weight, with additional weights suspended. They have been thus sunk in gravel, the substratum under which is clay, care having been taken in every case to leave a thickness of at least six feet of sound gravel between the bottom of the cylinder and the clay. When thus placed at the required depth they have been filled with concrete, so that each column may be considered as a solid pile six feet in diameter. They appeared to be very firm under the passage of the engines, and after passing several trains in both ways at various speeds over the bridge, so as to cross each other in the middle, no settlement was observed, although in the last week one pair has sunk to the extent of three-quarters of an inch. Mr. Brunel has, however, since the first construction of the bridge, taken out the surface of the ground surrounding the piles, and laid in a thick bed of concrete, completely enclosing all the piles on either side of the river, and upon this has caused a flooring to be laid, from which he has reared cast-iron supports, so as to allow the bridge, in case of a further settlement, to be wedged up, so that I feel, with this additional precaution, great confidence in recommending the Commissioners to authorize the opening of the railway.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

APPENDIX No. 39.

NORTH BRITISH RAILWAY.

SIR,

Edinburgh, October 5, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that I this day inspected a portion of the Hawick Branch of the North British Railway, extending from the St. Boswell Station to Hawick.

The bridges and viaducts of this portion of the line are complete, and the line is laid throughout; but the permanent way requires a great deal of adjustment, and ballasting in many places. The station arrangements are incomplete, there being, as yet, neither platforms nor signals, and at the Hawick Terminus the lines in the station, leading to where the platforms are to be, are not yet laid.

I

Appendix No. 38.

Great Western
Railway.
(Windsor Branch.)

Appendix No. 39.

North British
Railway.

Appendix No. 39.
—
North British
Railway.

I would recommend that the opening be postponed, inasmuch as, at present, it would be attended with danger to the public, by reason of the incompleteness of the works and of the permanent way.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

R. M. LAFFAN,
Capt. Royal Engineers.

SIR,

October 24, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that I yesterday inspected the Hawick Branch of the North British Railway, between St. Boswell Station and Hawick, 12½ miles in length, and which was inspected by Captain Laffan on the 5th inst., and reported by him incomplete in the adjustment and ballasting of the permanent ways, in station arrangements as regarded platforms and signals, and the laying of the rails to the terminal platform.

I have now to report, that I found the rails in good adjustment, and the line sufficiently ballasted, but owing to the recent construction of many of the embankments, and the material of which they are formed being clay, they are still in a state of subsidence, and will probably, during the winter, require considerable additions of ballast, and the constant attention of more than the usual number of plate-layers, to keep the line in proper adjustment; this circumstance, I consider, should induce the maintenance of a moderate speed in travelling over the line, certainly not to exceed 20 miles an hour. The signals and platforms are all complete. At the Hawick Terminus there is but one platform for the arrival and departure trains; it is proposed that all trains arriving shall stop about 100 yards from the platform, for the purpose of collecting the tickets; whilst this is doing, the engine will be detached, and run into the up-line, and take on the train by means of a rope. At a distance something less than 10 yards from the termination of the platform, the public road into Hawick runs in a direction perpendicular to the line of railway. No precautions had been taken to prevent the train running beyond the rails and into the road further than those I have mentioned, viz., of stopping it 100 yards before arriving at the terminus, and then running it up to the platform without being preceded by the engine. As the terminus is approached by a long descending gradient of 1 in 150, which is succeeded by a short level length up to the platform of only 12 chains, these measures appeared to me quite inadequate to insure the safety of the public using the road; I therefore told the resident engineer that, under the circumstances, I could not recommend the opening of the line. He begged that I would visit the terminus again to-day, to see if the precautions he should have by that time adopted might be considered sufficient. As I had the time to spare, I went down early this morning, and found that buffer-boards, strutted with whole timbers, had been put up at the end of the line sufficiently strong to prevent any train running beyond the rails. I would recommend a notice to the engine-drivers being put up on the gradient of 1 in 150 at the point where the steam should be shut off, so that the train may easily be brought up at the ticket-platform, even when the rails happen to be in their worst state.

The precautions I have recommended being attended to, I am of opinion that the line may with safety be opened for the conveyance of passengers.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 40.
—
Monmouthshire
Railway.
(Newport to Blaina.)

APPENDIX No. 40.

MONMOUTHSHIRE RAILWAY.—(Newport to Blaina.)

SIR,

Newport, October 18, 1849.

I HAVE to report, for the information of the Commissioners of Railways, that, in compliance with their appointment of the 15th instant, I yesterday inspected the Monmouthshire Railway from Newport to Blaina, a distance of 20½ miles, and again, to-day, examined that portion of it which adjoins the town of Newport. I find that it is a double line of tramway, laid with wrought-iron tram-plates, resting on cast-iron chairs, which are bedded upon wooden transverse sleepers, and that it follows the course of an old mineral tramway, which has been laid many years, and worked partly by horse and partly by locomotive power. A few amendments and deviations have been made, but generally the line remains the same as before, and crosses all high roads, parish, and private roads on the level, and being cut almost everywhere in the side of a hill, ascending and meandering up the valley of the Ebbw river, these roads cross it on hills more or less steep, but in some cases in a most objectionable manner, and the tramway having been allowed to become to a great extent a public thoroughfare, houses have sprung up, amounting in places almost to streets, close adjoining the tramway, which is in many cases their only outlet. A vast deal has been done since I last inspected this tramway to fence out these premises, but much still remains to be done, and the fencing generally along the line is not complete. On leaving the station in the town of Newport, the line proceeds on the level of the town, of which it heretofore formed a street, for some distance, but is now fenced off from the houses, between which and it a narrow road has been left on each side of the tramway, and, in its course, crosses two of the principal streets of the town on the

level; one of these being the communication between the town and the market, and the two together constituting the only carriage and cart-roads to the dock and out-lying part of the town called Pill. These streets, in addition to the crossing of this tramway which I have inspected, are also traversed by branch lines connecting it with wharves on the banks of the Usk canal, the public using them not being protected by gates, gate-keepers, or fencing, during the passage of locomotives. Gates have been, or will be, erected at those places where the passenger line crosses these streets, and, at my suggestion, signals are to be placed to protect these crossings, but nevertheless the obstruction will always remain, and, as the town increases, the inconvenience arising therefrom will likewise increase, and the crossings of the mineral branches remain unprotected. Between the Commercial-road crossing and the Cortybella Junction, as stated in my report to the Commissioners of the 19th April last, p. 22, "the tramway runs along the side of the Cardiff turnpike-road, from which it is fenced by a good wall, with openings to accommodate a row of good houses built on the opposite side, and the inhabitants of which have no means of leaving their premises but by crossing the railway." The Company propose to maintain the tramway in this position, and to construct a road at the back of these houses, so as to give the inhabitants an outlet; but this road has not yet been commenced, and until completed, and the access from the houses to the railway cut off, I cannot recommend that the railway should be allowed to open. Close adjoining the Cortybella Junction is another level crossing of a parish road, which also crosses a mineral branch worked by locomotives, and upon which there is a very considerable traffic. This road crossing is protected by gates where it crosses the passenger tramway, but not in crossing the mineral tramway. In reporting upon these arrangements, I feel it necessary again to draw the attention of the Commissioners to the highly objectionable manner in which the traffic on the railway is brought into the town. The town is rapidly increasing, and therefore the difficulty of making alterations in any plan which may now be adopted, and for which no more favourable time than the present can possibly offer, becomes daily greater. The powers under which this railway is now sought to be opened as a passenger line are contained in an Act (8 and 9 Vic., c. 169) for constructing a railway from Newport to Pont-y-pool by which they are required to improve their existing railways, wherever it may be necessary, so as to adapt them for the convenient passage of locomotive steam-engines, the speed being limited to 10 miles per hour. Numerous branches were in existence leading into the town, and I cannot ascertain that any plan was laid before Parliament and approved, by which either of these branches was specially authorized as the railway to be adapted for locomotive power; and, therefore, as the present plan appears to me highly objectionable, and not conducive to public safety, on account of the numerous level crossings and mineral junctions, and therefore inconvenient for the passage of locomotive engines, I feel it necessary to draw the subject to the attention of the Commissioners, in order that they may determine whether they will authorize the opening of this railway nearer to the town of Newport than the Cortybella Junction.

In proceeding upwards from the Cortybella Junction, at $1\frac{1}{2}$ mile from the town of Newport, the railway crosses the turnpike road leading from Newport to Cardiff on the level; this crossing is protected by signals, but it nevertheless would be conducive to public safety if it were avoided, as it easily might be, by a slight diversion carrying the railway over the road, and which would likewise improve the line by avoiding bad curves. About half a mile further, or 2 miles from Newport, I found a gate across the railway, which here enters Tredegar Park, and continues through it for about a mile, throughout which the railway is in no way fenced, the curves very sharp, and the road not properly maintained. I was informed that it was not the property of the Monmouthshire Railway Company, but that it belonged to Sir C. Morgan, who has established weighing-machines on the main lines for ascertaining the weights of all loads carried over the road. The Act above quoted provides, that this being portion of an unbroken line of communication, shall be so improved as effectually to adapt it for the convenient passage, at reasonable rates of speed, of the engines and carriages in use on the Company's railways. The instructions of the Commissioners directed that I should inspect the line of railway from Newport to Blaina, and as this formed part of it, although not the property of the Company, I went over it, and have to report that it is not in a fit state for the conveyance of the public, not being fenced, the tramway being in a bad state, and the curves very sharp, and also on account of the obstruction produced by the weighing-machines on both the up and down lines. Immediately on leaving Tredegar Park, the railway crosses, on the level, a high-road, and then the lines diverge, passing a cluster of about a dozen houses erected between the two lines of rails, having another level crossing of a public road and a junction with a tramway belonging to another Company immediately at the other end. The Company have enclosed the houses within fencing, providing outlets at each end to gain access to the public road level crossings; but this spot, called Pye-corner, remains nevertheless a very great obstruction to the working of the traffic, and the railway passes it in a manner likely to produce serious accidents. The two level crossings might be avoided by a slight diversion, which would also improve the direction of the railway, from this point upwards to Risca the line is in fair working order, but crosses on the level several public roads, which might generally be avoided by unimportant deviations.

At one of these, near the Royal Oak, I requested that a signal might be erected, in consequence of the steepness of the road, and the incline of the railway. At Risca, 7 miles from Newport, a branch line from Tredegar, the property of the Company, unites with the main line of tramway: I requested that some alterations might be made in this junction and in the signals, as at present it is not a safe working junction. Proceeding upwards, I had occasion to remark on the incompleteness of the fencing, and that in places trees and other things were too near to the railway; and near Chapel-bridge Station, water stations had been formed, which, in order to reduce the number of stopping-places on the line, I requested might be brought nearer to each other and to the station.

Appendix No. 40.
 Monmouthshire
 Railway.
 (Newport to Blaina.)

At or near New Bridge Station the railway crosses three public roads on the level; and, at a distance of about half a mile further, one of the same roads twice again. Proper precautions have been taken to secure these level crossings, but I should suggest to the Commissioners, for their consideration, whether five level crossings in a space of a mile, on an incline of 1 in 113, are convenient for the passage of locomotives where they can be avoided by a very trifling deviation, which would enable the Company to carry the tramway over, or to avoid these roads. From Crumlin upwards the road is in a very fair state, only requiring fencing, being double to Aberbeeg, and thence single to Blaina.

I have to remark generally that many signals were deficient, that several temporary switches or shifting plates are upon the line, and that most of the switches were of a nature which, as long as they remain upon the main line, I cannot recommend the Commissioners to allow the line to be opened; and that as many of the sidings are on inclines, it will be advisable to place stops upon them, to prevent waggons from running on to the main line. In conclusion, I have to report that, on account of the incompleteness of the works, the opening of the line will be attended with danger to the public using the same, even at the reduced speed to which they are restricted by Act of Parliament.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

J. L. A. SIMMONS,
 Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
 October 20, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed report from Captain Simmons, of his inspection of the Monmouthshire Railway from Newport to Blaina, and to inform you that, for the reasons therein stated, they have postponed the opening of the line in question for the purposes of public traffic for one month from this date.

I am at the same time to request you to call the attention of the Directors of the Company to the observations made by Captain Simmons in his report, as, until the Commissioners are satisfied that the objections made to the opening of the railway, as affecting the public safety, are removed, they cannot sanction any such opening.

I have, &c.,

The Secretary of the
 Monmouthshire Railway Company.

H. D. HARNESS,
 Capt. Royal Engineers.

SIR,

Monmouth, November 17, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that I this day re-inspected the Monmouthshire Railway from Newport to Blaina, concerning which I reported on the 18th October that it was not in a condition to be opened with safety for the conveyance of the public. Before proceeding over the railway, a copy of a resolution of the Committee or Board of Direction of the Company was placed in my hands, requesting that I would specifically point out what I consider requisite to be done with respect to the Park Mile, and was informed at the same time that plans are being prepared with the intention of obtaining from Parliament powers to improve those parts of the line which most require it.

Having examined the whole line, I have now to report that the gates of the Dock-road level crossing in the town of Newport have not yet been fixed, that the signals at the same place have not been erected, that an alteration of the junction with the mineral branch at the same place is to be made, and the temporary switches now there are to be removed.

The arrangement of the points and crossings at the Rose and Thistle junction require alteration, and the temporary switches to be removed.

The Cortybella junction is still worked with a temporary switch. On the Park Mile no fencing has as yet been erected, which will be necessary, except in those places where stone walls have been built, to support embankments or sides of cuttings. The entrance gates will require to be removed, their posts being inconveniently near to the rails; and it is necessary that the weighing-machines at the southern end should also be removed, and not be allowed to remain on the main lines. A portion of the road is laid on stone blocks, and the remainder on sleepers chiefly 7 feet long, which must be difficult to maintain in a good working state. An improvement is contemplated by which the curves, the radii of which are very small, will be flattened. At present they are so very sharp that they are highly objectionable.

At Pye Corner, one of the gates of the level crossing has not yet been fixed, and the fencing to shut out the inhabitants of the cottages from the railway has not been completed. At the Rymney junction the signals have not been fixed, and the temporary switches require to be removed. A signal is necessary for safety at the Rogeston level crossing, and the Rogeston junction, leading to some tin-works, cannot, as it at present exists, be worked with safety to the traffic upon the line.

The signals and points at Risca junction require re-arrangement. The junction with Sir B. Hall's tramroad requires to be altered so as to remove the facing-points, and the position of the signals to be changed, also the shifting switches to be taken away. I am of opinion, also, that a signal for the down line will be advisable to protect the Pont-y-wain level crossing. Sir B. Hall's tramroad is carried over the Monmouthshire Company's road by a bridge, the span of which is only 18 feet, which being too narrow for a double line of way, the Company have placed a signal-man to prevent two trains from meeting under the bridge. As two trains

could not possibly pass one another at this place without coming in contact, I requested that one line of rails might be connected into the other, so as to make only a single line of way from a little below the bridge to Chapple Bridge Station, and that this should be worked as a single line, no train being allowed to pass unless accompanied by a man appointed for the express purpose, whose duty would be to travel with every train over the single line; all danger from collision will thus be avoided. At Abercarn a level crossing of a parish road will require a signal, and an alteration will be necessary at Pont Aberbeeg junction. Besides these points particularly enumerated, I have to remark that there were many shifting rails or temporary switches which require removal, and that the fencing in many places was still incomplete, and that the whole line being on an inclination, and likewise generally all the sidings and connexions with the mineral works, I consider that it is absolutely necessary for the safety of the traffic that they should all be supplied with stops, to prevent loose waggons from escaping on to the main line. When I last examined this railway, I remarked to the officers of the Company, that it appeared to me absolutely necessary that the system of traction by horse-power should be abandoned, and locomotives only used, in order that the plate-layers may have an opportunity of properly maintaining the road. I find that this system still continues, and that the road therefore is in a very bad state; and I am naturally led to infer that the locomotive stock of the Company is not sufficient to carry all the traffic. Until the road shall have been repaired and properly beat up, which is impossible until the horse traction is abandoned, I do not consider that the road can be maintained in a state for the safe conveyance of the public. Under all these circumstances, and for the reasons before stated, I have therefore to report, that in my opinion the opening of this railway from Newport to Blaina will be attended with danger to the public using the same by reason of the incompleteness of works, and permanent way and insufficiency of the establishment for working such railway.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

Appendix No. 40.
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Monmouthshire
Railway.
(Newport to Blaina.)

SIR,

Office of Commissioners of Railways, Whitehall,
November 20, 1849.

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Captain Simmons' report of his re-inspection of the Monmouthshire Railway, from Newport to Blaina, and to inform you that, for the reasons therein stated, they have further postponed the opening of the line in question for the purposes of public traffic, for one month from this date.

I have, &c.,

The Secretary of the
Monmouthshire Railway and Canal Company.

H. D. HARNES,
Capt. Royal Engineers.

SIR,

Lincoln, December 19, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that I yesterday re-inspected the Monmouthshire Railway, from Newport to Blaina, concerning which I reported on the 18th October, and again on the 17th November, that it was not in a condition to be opened with safety for the conveyance of the public. On my inspection yesterday I again found that much fencing was deficient, many temporary points still existed, and that the system of traction by horse-power being continued, the roadway was in a very bad condition, and generally, that but few of the points objected to in my previous reports had been attended to, either on the Company's line or on that portion of the line known as the Park Mile, which passes through Tredegar Park. From the information I obtained from the locomotive Superintendent, there seems but little probability of a sufficiency of locomotive power being supplied to enable the Company to dispense with horse-traction before the month of February, during which time the road *cannot*, in my opinion, be placed and maintained in a safe state for the passage of engines and heavy carriages. In the mean time a most dangerous state of things subsists: a very heavy mineral traffic, with a considerable passenger traffic is carried on, partly by horses and partly by locomotive power; and in consequence of the state of the road, I expect daily to hear of some terrific accident, accompanied with loss of life. The district is very populous, and from the peculiar manner in which it has grown up in the vicinity of the Monmouthshire Canal Company's tramroads, which have been heretofore used as common high-roads, upon which every person was allowed to travel either on foot or in his own private tram-carriage or waggon, the people have no other communication in many cases by which they can leave their homes, and therefore the Company, not having fulfilled the engagement contained in their Acts, that they were to carry passengers on and after the 1st August last in properly constructed carriages, allow the inhabitants or others requiring to travel to get into carriages, or on waggons attached to mineral-trains, and so convey them toll-free (I believe) over the line. The same danger to life and limb therefore exists now, and even to a much greater extent, than if the line were regularly opened to the public, who would then only travel in carriages; I have therefore considered it my duty to bring the subject under the consideration of the Commissioners, reporting, at the same time, that in my opinion the opening of the Monmouthshire Railway, from Newport to Blaina, will be attended with danger to the public

Appendix No. 40. using the same, by reason of the incompleteness of the works and permanent way, and the insufficiency of the establishment for working such railway.
 Monmouthshire Railway.
 (Newport to Blaina.) Capt. Harness, R.E.,
 &c. &c. I have, &c.,
 J. L. A. SIMMONS,
 Capt. Royal Engineers.

P.S.—In the opinion above expressed, as to the danger to be apprehended from carrying on the traffic by locomotive engines and in heavy carriages, I am fully borne out by an accident which happened a few days ago to a mineral-train in passing over the Park mile, when several of the waggons ran off the tram-plates, and were precipitated down a bank, and much damaged,
 J. L. A. S.

Office of Commissioners of Railways, Whitehall,
 December 21, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Captain Simmons' Report of his re-inspection of the Monmouthshire Railway, from Newport to Blaina, and to inform you that, for the reasons therein stated, they have further postponed the opening of the line in question for the purposes of public traffic for the period of one month.

I am at the same time to call the attention of the Directors of the Company to the remarks made by the Inspecting Officer in his report upon the dangerous mode in which the traffic is carried on upon the Monmouthshire Railway, the unauthorized manner in which passengers are conveyed, and the non-compliance with the provisions of the Company's Act as to the completion of the line for passenger traffic within the specified time. If this dangerous state of things is allowed to continue, it will become the duty of the Commissioners to take such legal proceedings as the Law Officers of the Crown may advise for restraining the use of the line in a manner unauthorized by law, and seriously endangering the public safety.

I have, &c.,

The Secretary of the
 Monmouthshire Railway and Canal Company.

H. D. HARNESS,
 Capt. Royal Engineers.

Appendix No. 41.

Windsor, Staines,
 and South Western
 Railway.

APPENDIX No. 41.

WINDSOR, STAINES, AND SOUTH WESTERN RAILWAY.

Office of Commissioners of Railways, Whitehall,
 August 10, 1849.

SIR,

I HAVE the honour to report, for the information of the Commissioners, that I yesterday inspected a portion of the Loop line of the London and South Western Railway, extending from its junction with the Richmond Railway at the Barnes station to a temporary terminus situated at a distance of 4 miles and 68 chains; also the Windsor extension of the same railway.

The permanent way of the portion of the Loop line inspected by me required still a few days' work to complete the ballasting; there remained also to fill up some of the platforms to the proper level with gravel, and to complete the fixing the signals, which were all on the spot. I am of opinion, however, that everything remaining to be done may be completed by Monday next, the 13th instant, and beg to recommend that permission be given to the Company to open on that day.

The Windsor Extension is still in a very unfinished state, the bridge over the Thames not being completed, and many portions of the permanent way not being laid. I am, therefore, of opinion that the opening the Windsor Extension would be attended with danger to the public by reason of the incompleteness of the works and of the permanent way.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

R. M. LAFFAN,
 Capt. Royal Engineers.

SIR,

Whitehall, November 26, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that, having communicated with the Windsor, Staines, and South Western Railway Company, I inspected that portion of their line which lies between Datchet and Windsor, on Thursday, the 22nd instant, being $1\frac{1}{2}$ mile in length. I found the line complete in every respect as a double line, but having been opened with a temporary terminus at Datchet, several points had, for convenience in working the station, been laid so as to meet the traffic. I consider that it is absolutely necessary for the public safety that these points should be removed or re-arranged upon the opening of the line to its present terminus at Windsor.

I examined the bridge over the Thames at Blue Pots, carefully. It is founded upon masses of concrete laid in cast-iron piles, which have been driven partly by atmospheric pressure and partly by the imposition of dead weights. Upon the top of these columns or piles a cast-iron plate has been fixed, and then large Yorkshire landings to carry brick-piers and abutments, the top of the cast-iron being nearly two feet below the surface of the water. Cast-iron arches, of ample dimensions to carry the weights that may come upon them, span the openings, having

plates between them to carry ballast, upon which the roadway is laid in the ordinary manner with longitudinal timbers and the bridge rail. When the bridge was first completed and the weight of the superstructure was allowed to come upon the piers, they began to settle, and rendered the structure so insecure that the engineer was obliged to remove the superstructure, and, having loaded with dead weights exceeding to a very considerable amount the load that will come upon the bridge in practice, the piers settled, and have apparently taken a firm bearing by pressure upon the clay on which they rest. The greatest load having remained on for a week without producing any effect, it was removed and the superstructure restored upon the arch principle. The engineer, has, however, considered it judicious to substitute cinder for gravel-ballast, so as to reduce the permanent load. From the depth to which the piles are driven I do not imagine that any injury to the foundations is to be apprehended from the scour of the river; but as the foundation has proved itself treacherous, more especially in the piers which stand in the river, and the effect of vibration from passing engines has not yet been fully tried, I have to suggest that a very careful examination of the levels of the piers should be for some time maintained, and that, should any the *slightest* settlement be observed, the trains should *immediately* cease to run over it. This I consider necessary in consequence of the adoption of the arch principle depending upon the stability of the piers and abutments. As every precaution has been taken to drive the piles as far as they will go, it is very probable that they will not again move; but as the firmness of the foundation has been proved to be acted upon by the water of the river, it is impossible, without experience, to say whether passing engines will produce a further settlement.

I caused an engine to be moved over it several times in each direction, and found that the vibration of the brick piers was very small, so that, with the precaution above recommended, I conceive that no risk will accrue, while the experience is being obtained, by the public traffic being carried over it.

While passing over the line, I remarked that, in consequence of Richmond having been a temporary terminus of the line, which has been opened by degrees, several facing points had been introduced, and, upon the extension of the line, have been allowed to remain. As I consider these points to be conducive to the danger of the public using the railway, I have felt it my duty to bring the subject under the consideration of the Commissioners.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

SIR,

London, November 29, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that I yesterday inspected the Loop line of the Windsor, Staines, and South Western Railway, from Smallberry-green to the junction with the Windsor line at or near Hounslow, a distance of 2 miles 2 chains.

Upon examination of the works, I found that the centres, although not yielding support to the arches of a brick bridge over the Brewhouse-lane, leading from Hounslow to Isleworth, had not been removed; and that the cement with which the arches are built appeared not to be of the best description: I cannot, therefore, pass an opinion on the bridge until these centres are entirely removed, as no measurements had been taken to ascertain whether any settlement had taken place in the arches, and it is impossible to see whether they have maintained their form or not. The turnpike-road from Brentford to Hounslow, upon which the traffic is very great, is crossed by a bridge carrying the railway, the superstructure of which is formed of two wrought-iron tubular girders, having transverse girders between them, upon which planking has been laid, and longitudinal timbers, with the bridge-rail bolted down to it. The noise produced by a passing train is very great, and unless reduced, will be likely to produce great inconvenience, and much risk by frightening horses upon the road. It appears, therefore, that it would be advisable to lay the permanent way with ballast between it and the planking, or to adopt some other means so as to deaden the sound produced by passing trains. At the Smallberry-green station, which has been a temporary terminus, a crossing which has been laid to meet the traffic must be either altered or removed, being, as now laid, a source of danger to the traffic. Under these circumstances I have to report that I am of opinion that the opening of this railway from Smallberry-green to Hounslow will be attended with danger to the public using the same, by reason of the incompleteness of the works and permanent way.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

SIR,

Whitehall, December 15, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that I again examined the Loop line of the Windsor, Staines, and South Western Railway, from Smallberry-green to Hounslow, on the 8th instant, when I found that the centres had been removed in the bridge over the Brewhouse-lane, and the arches having maintained their form, I have every reason to believe that they are perfectly sound and safe for the transit of trains. The bridge over the public road at Smallberry-green had been so altered by the addition of a few inches of ballast under the longitudinal timbers carrying the rails as in a great measure to nullify the sound produced by passing trains. But having had an opportunity of examining

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Windsor, Staines,
and South Western
Railway.

the drawings of this bridge since my inspection, I have to report that I have not sufficient confidence in the structure to report that I consider it safe for the repeated passage of trains for an unlimited number of times, such as will ensue after the opening of the line for public traffic. The bridge is of the following construction: the abutments have a clear interval between them of 99 feet 8 inches, which is broken into three spaces by two piers separating the foot-paths on each side from the roadway, leaving a clear interval between the piers of 66 feet, measured obliquely on the face of the bridge across the road-way. These spaces are spanned by two wrought-iron tubular girders extending over the three openings, and bearing, therefore, upon both abutments and piers, and which form the parapets of the railway bridge. Between these girders are wrought-iron double T girders, carrying a flooring of 3-inch planking, upon which is now laid ballast of fine gravel, 4 inches in thickness under longitudinal timbers, to which the rails are fixed, as in the ordinary permanent way laid upon the system of longitudinal bearings.

These box, or tubular girders, sections of which are annexed, are formed of wrought-iron plates, varying from $\frac{1}{4}$ ths of an inch in thickness in the centre to $\frac{1}{8}$ ths at the points of bearing; and are strengthened with angle-iron of corresponding dimensions; but, as they take bearings on the intermediate piers, the bridge cannot be regarded as a single span of 100 feet, in which case the girders would not, in my opinion, be of sufficient strength to carry the partly permanent and partly moving loads that may come upon them in practice, but must be considered as receiving support from the intermediate piers, in which case, if all the ordinary conditions of girders over single spans subsisted, and they were considered as simple beams, having a clear interval between their supports of 66 feet, their breaking weight would probably amount to, rather more than four times the greatest load that can be brought upon them in practice. But these conditions do not, as far as I can learn, subsist; for although the extension of the beams beyond the piers and over the smaller openings would, if duly constructed, add to their strength, I find that no provision has been made to stiffen and strengthen them over those points where they receive support from the piers. In all the wrought-iron girders which I have heretofore seen it has been considered necessary to add to their stiffness and strength over rigid points, and, therefore, more particularly as the vertical angle-irons used in the construction of the beam do not even in all cases happen to be situated over these points, I do not feel that I can take upon myself to certify the sufficiency of this structure to sustain the repeated passage of heavy loads, as in this particular a departure has been made from the principle of the tubular bridge as heretofore constructed. The thickness of the wrought-iron at these points in the sides and top of the tubes is $\frac{1}{4}$ ths of an inch, and of that in the bottom $\frac{1}{8}$ ths of an inch.

Under these circumstances, I have to report that I am of opinion that the opening of this portion of the Loop line of the Windsor, Staines, and South Western Railway, extending from Smallberry-green to Hounslow, will be attended with danger to the public using the same, by reason of the insufficiency of the works.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

SIR,

Whitehall, December 26, 1849.

I HAVE to report to you that the resident engineer of the Windsor, Staines, and South Western Railway has this day informed me that, in consequence of the remarks made in my report of the 15th instant, upon the bridge at Smallberry-green over the turnpike-road, angle-irons have been rivetted vertically upon the sides of the tubes over the points where they rest upon the intermediate piers, and trusting that these will be sufficient to secure the stiffness of the structure at this point, I have to report that I am not aware of anything to prevent the opening of this line for the conveyance of the public.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

Appendix No. 42.
Shrewsbury and
Birmingham
Railway.

APPENDIX No. 42.

SHREWSBURY AND BIRMINGHAM RAILWAY.

SIR,

October 25, 1849.

I HAVE to report to you, for the information of the Commissioners, that on my arrival yesterday at Birmingham, I was waited upon by Mr. Baker, the engineer of the Shrewsbury and Birmingham Railway, who stated to me that, in consequence of a disagreement with one of the contractors, he had been unable to complete a small portion of the permanent way, and was anxious that I should postpone my inspection. I informed him that any postponement must come from the Commissioners, and that it would be necessary for me to see and report upon the line; as, in anticipation of my being able to accede to his request of postponing the inspection, he had left some portions on other parts of the line incomplete; I arranged with him to confine my inspection this day to the part of the line where the permanent way was imperfect, and I have now to report, that between the 14th and 15th mile in a cutting and through a tunnel, about 30 chains of the permanent way, requires

adjustment and drainage, and without reference to the works on the other parts of the line, the incompleteness of the permanent way *alone* on this portion of the railway would render it unsafe to open the line for the conveyance of passengers.

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Shrewsbury and
Birmingham
Railway.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

Warrington, November 8, 1849.

I HAVE to report, for the information of the Commissioners, that I this day inspected the extension of the Birmingham and Shrewsbury Railway from Oaken Gate to Wolverhampton. I found the permanent way in good order, the station arrangements complete, and the bridges substantially constructed. At the Oaken Gates end there is a tunnel of about a quarter of a mile long, it is constructed wholly of brick without an invert, the side wall standing on rock which reaches as high as the springing of the arch; it is nevertheless lined throughout; the brickwork of the arch is partly set in cement and partly in mortar, made with hydraulic lime; the brickwork varies from 3 to 4 bricks in thickness; parts of the tunnel are very wet, and these parts are lined with corrugated iron; I was informed that the parts which were wettest were constructed in open cutting. The parts of this tunnel exposed to view had every appearance of soundness; and for those parts concealed from view by the lining, I had the assurance of Mr. Baker (the engineer in charge of the works under Mr. Stephenson) that they were perfectly sound, and that all the other parts of the tunnel were so likewise. I thought it my duty to inquire particularly of Mr. Baker the cause of a paragraph I saw in the papers, viz., "That Mr. Stephenson had inspected the tunnel, and pronounced it to be quite safe," and he informed me that it had reference to old coal-workings under the tunnel, but that borings having been made in three different parts of the tunnel which went a depth of 60 feet below the sole of the tunnel through solid rock, it was to be presumed that no danger was to be apprehended from the falling in of the roofs of the old workings.

From my own examination of the tunnel, and the statements of Mr. Baker, I have every reason to believe that it is soundly constructed, and I am of opinion that the line may be opened with safety for the conveyance of passengers.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

APPENDIX No. 43.

Appendix No. 43.

ST. HELEN'S EXTENSION.

St. Helen's
Extension.

Railway Commissioners' Office,
October 27, 1849.

SIR,

I HAVE the honour to report to you, for the information of the Commissioners, that on Thursday, the 25th instant, I inspected the extension of the St. Helen's Railway into the town of St. Helen's.

The length of this extension is $21\frac{1}{2}$ chains. It has been constructed without any authority from Parliament, on land belonging to the Company. The line crosses no public road, but there is one private road and a colliery tramway, which it crosses by level-crossings, with the consent, as I am informed, of the parties concerned.

The whole extension is on an embankment, formed of ashes and cinders from neighbouring factories; the material appears to stand very well.

The line crosses the Sutton Brook by a stone arch of a semicircular form, 14 feet in span. It also crosses the Sankey Canal, which belongs to the Railway Company, by a swivel-bridge. I believe both these bridges to be sufficiently strong; and I do not anticipate any difficulty in the working of the swivel-bridge, for both railway and canal are under the same direction; and the Company's regulations are, that the bridge shall always be set for the trains, and only opened for boats at times when no trains are expected, and after signals shall have been made to stop any unexpected train that might arrive.

The station arrangements at the new terminus are not yet complete; neither platform nor signals being ready. At the swivel-bridge, also, the signal is not yet in place.

The permanent way is not properly adjusted. At the junction with the old line, the plans sent to this department show a curve of $7\frac{1}{2}$ chains radius; but on going over the line it appeared to me that a much sharper curve had in some places been used; and, on taking measurements to ascertain the true radius, I found that at one place it was under 3 chains. I attribute this, however, not to any intention of laying out such a sharp curve, but to haste, or a want of proper attention to preserve the uniformity of the one intended.

The rail used weighs 65 lb. to the yard. This is a light rail, but the traffic will not be heavy, and the speed will necessarily be slow. It is laid in 16 feet lengths, with cross-sleepers 4 feet apart—a wide bearing for such a light rail.

The fencing of the line is incomplete, one side being wholly uncovered. The road level-crossing, also, is only provided with a gate at one side.

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Extension.

I am of opinion that before this extension can be opened with safety for public traffic it will be necessary,—

1. To re-adjust the permanent way.
2. To complete the station arrangements at the new terminus.
3. To place signals at the terminus, and at the swivel-bridge.
4. To complete the fencing; and
5. To put a second gate to the private level-crossing.

I would therefore recommend that the opening of this extension be postponed; as, in my opinion, it would at present be attended with danger to the public, by reason of the incompleteness of the works, and of the permanent way.

In conclusion, I beg to inform you that, in going over the old portion of the St. Helen's Railway, from the junction with the North Western Railway to the old terminus at St. Helen's, I remarked that the permanent way was in very bad order, and that some of the junctions with the coal-lines were effected in a very rough way, by means of shifting rails. I am of opinion that a line for passenger traffic should not be allowed to remain in such a state.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

SIR,

November 13, 1849.

I HAVE to report, for the information of the Commissioners, that on the 8th instant I inspected the extension branch of the St. Helen's Railway, and I found that all the suggestions made by Capt. Laffan, in his inspection Report of this line, had been attended to, with the exception of a signal at the terminus.

Since my inspection, I have communicated with Capt. Laffan to ascertain his opinion with respect to the signal arrangements; and I find that he considers a distance signal should be placed at the swivel-bridge, to be worked by a wire from the platform; and that the signal used at the bridge should be likewise a distance one, placed about 200 yards off, in the direction of the old station, to be worked by the man who has charge of the bridge, or such other arrangement of the signal adopted as will offer an equal amount of security to the public.

I concur with Capt. Laffan in this opinion, and until they are carried out in such a way as will meet these views, I must report that the line cannot be opened without danger to the public using the same, owing to the incompleteness of the signals.

Capt. Laffan has drawn my attention to the insecure state of a level-crossing of a tramway close to that of a private road. I quite concur with him; that some further precautions than those already adopted, viz., of bars placed across the tramway, and left unlocked, should be adopted, before permission is given for the opening of the line.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNN,
Capt. Royal Engineers.

SIR,

Office of Commissioners of Railways,
December 19, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that I yesterday re-inspected the extension of the St. Helen's Railway, from the old terminus to the town of St. Helen's.

The fencing of the extension is now complete.

The new terminus is protected by a signal placed at the swing-bridge, and worked by a wire from the platform.

Another distant signal is placed 200 yards from the bridge, in the direction of the old terminus, worked by a wire from the lodge occupied by the bridge-keeper.

Both these signals are to be fixed permanently at the "danger signal," and all up-train engines on approaching the signal which extends from the bridge in the direction of the old terminus are to whistle loudly to the bridge-keeper, and on no account to pass the signal till it has been turned to "all right;" nor is the bridge-keeper to turn it to "all right" till the signal from the station has been also turned to show that the station is clear.

Trains about to leave the new terminus are to whistle loudly before starting, and on no account to start till the bridge-keeper shows them a white flag or white light from the northern end of the bridge.

No second engine is ever to be allowed to pass on to the single line.

All trains are to be restricted to a speed not exceeding five miles an hour between the old and the new terminus.

The level-crossing of the tramway is closed by moveable bars, fencing in the railway, which bars are to be kept always locked; the keys are to be kept by the bridge-keeper, who will open them when required. And as all up-trains will on such occasions be stopped by the fixed danger signal from the bridge before arriving at the level-crossings, and as all down-trains must be detained at the terminus till the bridge-keeper returns to the bridge to

give the "all right" signal, it appears to me that these arrangements, if the regulations be strictly enforced, will provide sufficiently for the safety of the public.

I beg to recommend, therefore, that permission be given to the St. Helen's Company to open this extension for public traffic.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
R. M. LAFFAN,
Capt. Royal Engineers.

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St. Helen's
Extension.

APPENDIX No. 44.

EDINBURGH AND BATHGATE RAILWAY.

SIR,

Glasgow, November 3, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that I yesterday inspected the Bathgate Branch of the Edinburgh and Glasgow Railway, which commences at the Ratho station on the main line, and extends to Bathgate, a distance of 10½ miles.

And I have to report, that the permanent way is laid double from the junction to Houston station, a distance of 5 miles 8 chains; from thence to within one mile of Bathgate it is single, and then double to the terminus. I found all the works complete, with the exception of the signal at the junction, and at that point it was proposed to make one signal answer for both main line and branch: as I am of opinion that such an arrangement of signals could not be worked with safety, I must report that in my opinion the line cannot be opened with safety to the public using the same, owing to the incompleteness of the signals. As it was stated to me that signals for both main line and branch would be erected by the evening, I propose, on my return from the Aberdeen Railway on Tuesday, to re-inspect the line, and will immediately report the result.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 44.
Edinburgh and
Bathgate Railway.

SIR,

November 6, 1849.

I HAVE the honour to report, for the information of the Commissioners, that I have just inspected the junction of the Bathgate Branch with the Edinburgh and Glasgow Railway, and that I find the additional signal which I considered requisite for the safe working of the branch, and to the want of which I had alluded in my former report, has been erected; the objection, therefore, which I made to the opening of the line is removed, and I consider the line may now be opened with safety for the conveyance of passengers. I should have remarked in my former report, that there is no turn-table at the Bathgate terminus, and I would beg the Commissioners to call the attention of the Company to this circumstance, with a view that no time should be lost in putting one in.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
GEORGE WYNNE,
Capt. Royal Engineers.

APPENDIX No. 45.

NORTH WESTERN RAILWAY.

SIR,

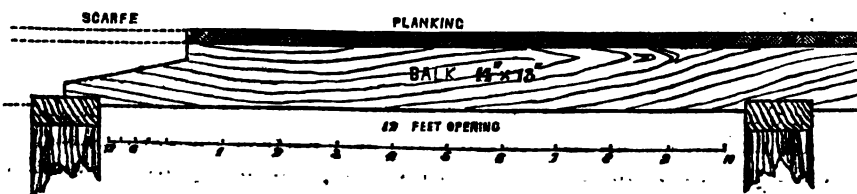
Lancaster, November 6, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that I this day inspected a portion of the North Western Railway, extending from Lancaster to Wenington, a distance of 10 miles and 31 chains.

As I am of opinion that the line cannot yet be opened with safety to public traffic, I shall not at present enter into any detailed description of the works.

The following are my reasons for coming to this conclusion:—

- 1st. The permanent way wants ballasting in places.
- 2nd. The fencing is by no means complete.
- 3rd. At some of the level-crossings the gates are not yet fixed.
- 4th. At the Wray Station there are no signals.
- 5th. The Artlebeck Viaduct is, in my opinion, unsafe in its present state. Two of the land openings, 12 feet in span, are crossed by means of a single balk 14" x 13" under each rail, resting on a horizontal cross-piece 12" x 6", which again rests upon piles. The whole of the 14" x 13" balks are scarfed directly over the cross-piece, and the scarf has been made in such a way as to give a very slight bearing to the balks which cross one of the openings. I annex a sketch of the scarf.



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For these reasons I am of opinion that the opening of this portion of the North Western Railway in its present state would be attended with danger to the public, by reason of the incompleteness of the work and of the permanent way.

The Company have made two deviations in the gradients, passing the limit to which they are restricted by the Public Acts: first, in substituting a gradient of 1 in 100 for one of 1 in 390, for a length of 9 chains; and secondly, in substituting a gradient of 1 in 75 for one of 1 in 419, for a length of 10 chains. Both these deviations occur near the Lancaster station of the Company. I am of opinion that the authority of the Commissioners should have been sought to sanction these deviations prior to my inspection.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
November 7, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Captain Laffan's report of his inspection of the North Western Railway from Lancaster to Wennington; and to inform you that, for the reasons therein stated, they have postponed the opening of the line in question for the purposes of public traffic for one month from this date.

I am at the same time to request you to furnish the Commissioners with some explanation relative to the deviations referred to in Captain Laffan's report, and to call your attention to the great inconvenience to the public service of notice having been given to inspect the line when the works were not in a sufficiently advanced state to justify such notice being given.

I have, &c.,

To the Secretary of the
North Western Railway Company.

H. D. HARNES,
Capt. Royal Engineers.

SIR,

Settle, November 7, 1849.

WITH reference to Captain Laffan's inspection of a portion of our line yesterday, I am instructed to state, for your information, that a gradient near to the Lancaster station was altered from 1 in 419 to 1 in 75 to meet the requirements of the Admiralty, who insisted on the viaduct over the River Lime (adjoining the altered gradient) being raised 6 feet above the Parliamentary level. A gradient of 1 in 390 at the point where the railway passes under the County Bridge, was altered to 1 in 100, for the purpose of getting out of the reach of the tide-way.

These matters were more fully explained to Captain Laffan, and I hope that the Railway Commissioners, after taking the matter into their consideration, will not object to give their usual certificate.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

W. WHELON, Secretary.

SIR,

Settle, Yorkshire, November 10, 1849.

I HAVE received your favour of the 7th instant, enclosing a copy of Captain Laffan's Report on that portion of our line which he recently inspected, and I am instructed to say, in reply, that all the works referred to as incomplete have received the attention of our engineer, and are now completed in accordance with Captain Laffan's suggestions.

When the previous notice was given, an engine was passing over the line several times daily, and our engineer stated that everything would be ready by the time the Inspector came, the incessant rains of the two or three succeeding days caused great damage to the permanent way in several places, and otherwise threw matters into disorder; I hope the Commissioners will believe the Directors have not wilfully caused inconvenience to the public service.

In reference to the alteration of gradients near the Lancaster station, I wrote you on the 7th instant, and trust the reasons assigned have been considered satisfactory.

The present contract for mails between Lancaster and Settle expire on the 18th instant, and arrangements are made for carrying the mails by railway, on and after the 19th instant: it is very desirable that the trains should commence running a day or two previously, I have therefore respectfully to request that you will make the necessary arrangements for a further inspection of the line, if possible, not later than Wednesday or Thursday next.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

W. WHELON, Secretary.

SIR,

Lancaster, November 17, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that, in compliance with the instructions conveyed to me in your letter of the 12th instant, I yesterday re-inspected the portion of the North Western Railway, extending from Lancaster to Wennington.

All the deficiencies pointed out in the report of my first inspection have since been made good; the permanent way is now in very fair order; the fencing has been finished; gates have been erected at all the level crossings; and the platform and signals at the stations are complete; the defects in the construction of the Artlebeck viaduct have also been remedied; and I am of opinion that, as far as the works and the permanent way of this portion of the North Western Railway are concerned, the line is now in a fit state to receive public traffic.

At the time of my first inspection of this portion of the North Western line I had requested to have shown to me the locomotive and rolling stock with which the Company proposed to work it; but the Company not having anticipated such a request, it could not then be collected; I informed them that when the line was re-inspected it would be necessary to get it together.

On completing my re-inspection of the works yesterday evening, I requested that the locomotive and rolling stock might be ready for inspection this morning at the Company's Lancaster station, and this morning I proceeded accordingly to inspect it.

I learn from the Secretary that the Company have entered into a contract with a private individual at Lancaster, who has engaged to work their traffic at the uniform rate of 1s. 1d. per mile per train, the contractor supplying locomotive power and carriages, and the Company furnishing guards.

The rolling stock at present consist of 10 carriages, which number I have no reason to believe insufficient.

The locomotive stock consists of two engines belonging to the Company, and one the property of the contractor, who has engaged to work the line.

Of the two locomotives belonging to the Company, one is a small four-wheeled engine, in very bad order, and utterly unfit for passenger traffic. The Company, I understand, mean to employ it as long as possible in ballasting, and then to sell it, as they do not think it worth the expense of a thorough repair; the second is a six-wheeled engine, with outside cylinders; this also is in very bad order: the engine has been running a considerable time, and wants a thorough repair. I understand the Company mean to employ this engine for a short time longer at its present work, removing materials, &c., and then send it to have a thorough repair, after which it is to be used for goods trains.

There remains the engine belonging to the contractor. This is a four-wheeled engine, weight 12 tons, which till very lately had been running on the Lancaster and Preston Railway. It is the companion engine (but of somewhat less power) to the John of Gaunt, which drew the local train of the Lancaster and Preston Company, when it was overtaken and run into by the Lancaster and Carlisle Company's express train at the Bay Horse station. It will be remembered that the John of Gaunt was drawing a light train; but being an engine of but very moderate power, it could not keep its time under the influence of a high wind. Its companion, the Victoria (of less power), is now the only engine in anything like an efficient state of repair, with which it is proposed to conduct the traffic upon this portion of the North Western Railway, a traffic which, in the passenger branch alone, proposes to start with 14 trains daily, commencing to run at half-past 6 A.M., and not concluding till 7 P.M., and presenting a mileage of 120 miles.

The tender break of the Victoria engine is worked by the old apparatus of a lever, upon which the breaksmen is obliged to stand to cause the breaking surfaces to press upon the wheels. This dangerous contrivance is not used on tenders of modern construction, and it should be changed without delay.

I am of opinion that the traffic upon this portion of the North Western Railway cannot be conducted with less than three good and efficient engines; and, as I deem the present stock possessed by the Company and their contractor inadequate to the work, I beg to recommend that the opening of this portion of the North Western Railway be further postponed, inasmuch as such opening would, in my opinion, be attended with danger to the public, by reason of the insufficiency of the establishment for working it.

In conclusion, I beg to call the attention of the Commissioners to the fact, that the North Western Company have already begun to run passenger-trains between Lancaster and Wennington. On my pointing out to the Secretary the impropriety of such a proceeding, he informed me that he had received orders from his Directors to open the line on the 17th, and that he was obliged to obey them.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
November 20, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Captain Laffan's Report of his re-inspection of the North Western Railway from Lancaster to Wennington; and to inform you that, for the reasons therein stated, they have further postponed the opening of the line in question for the purposes of public traffic for one month from this date.

I am at the same time to call your attention to the last paragraph of Captain Laffan's Report, stating that the line has been already opened for public traffic notwithstanding the postponement directed by the Commissioners in their letter of the 7th instant, and to observe to you, that it will be their duty to consider, after hearing the Company's explanation, whether

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or not they shall instruct the Law Officers of the Crown to proceed against the Company for the recovery of the penalties imposed by the provisions of the 5 and 6 Vict. chap. 55, sec. 6.

I have, &c.,

*The Secretary of the
North Western Railway.*

H. D. HARNESSE,
Capt. Royal Engineers.

Sir,

Settle, November 22, 1849.

YOUR letter of the 20th instant, and a copy of Captain Laffan's Report, was laid before our Board of Directors this day, and I am instructed to reply thereto.

When your letter of the 7th instant was laid before our Board, it was accompanied by an assurance on the part of our engineer, who accompanied Captain Laffan on his inspection, that his requirements could all be completed in two or three days, and that, if the Commissioners could be prevailed upon to send down an officer any time during the week ending 17th instant, no difficulty existed in opening the line on that day. Desiring to fulfil their engagements with the Post-office for the conveyance of the mails, and confidently relying on the fact that all the requirements of Captain Laffan, as set forth in his Report dated November 6th, were complied with, the Directors ventured, in anticipation of the approval of the Commission, to order arrangements to be made for opening the line on the 17th instant. The Directors, however, find they have committed an error in trusting to these circumstances, and in not having told the Post-office authorities, when they applied to the Company to carry the mails on the 19th instant (the existing mail contracts terminating on the 18th), that they could enter into no arrangement until they had received the sanction of the Railway Commissioners to the opening of the line. Under these circumstances the Directors request the forbearance of the Commissioners, assuring you that arrangements are now in progress, and will be completed in a few days, for fully carrying out Captain Laffan's suggestions, and that in the mean time additional precautions have been taken to prevent the possibility of any injury to the public.

The Directors, in conclusion, can only say that they are entirely in the hands of the Commissioners, and they will, if the Commissioners desire it, discontinue the running of any or all of the present trains, only remarking that, after all other public conveyances have been taken off the road, and the Company's time-bills have been extensively circulated, great inconvenience to the public would be thereby occasioned.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

W. WHELON, Secretary.

Sir,

Leeds, November 27, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that I yesterday proceeded to Lancaster to inspect the North Western Railway for the purpose of ascertaining what additional arrangements had been made by that Company for adequately working their line between Poulton and Wennington, Captain Laffan having, in his Report of the 17th, stated that, owing to the insufficiency of the then working arrangements, the opening of the line would be attended with danger to the public.

The Company, in their letter to the Commissioners of the 22nd instant, state, "that arrangements are now in progress, and will be completed in a few days, for fully carrying out Captain Laffan's suggestions." These "suggestions" I find stated in Captain Laffan's Report to be his "opinion that the traffic upon this portion of the North Western Railway cannot be conducted with less than three good and efficient engines."

I have, therefore, now to inform you what the new arrangements of the Company consist in:—They have hired from the Midland Company a four-wheeled engine, which they have put on their line between Ingleton and Skipton, and have sent a four-wheeled engine from that line to work between Poulton and Wennington. This engine has not yet reached its destination, but is *en route*, and I saw it at Skipton, attached to a goods train going to Preston. This engine, I was informed, had been purchased six months ago, from Messrs. Bury. It was not a new engine, but everything had been renewed in it except the wheels, boiler, and frame; and, from the appearance of the engine, I have no reason to doubt the correctness of what was told me.

The Company do not propose making any further addition than this to their working stock. Of the three engines in possession of the Company at the time of Captain Laffan's inspection, he has reported that only one of them was "in anything like an efficient state." The arrangements, therefore, of the Company for working the line still remain short of that which is stated to be necessary in Captain Laffan's Report; I must, therefore, report that the cause of danger to the public by reason of the insufficiency of the establishment for working the line, as reported by Captain Laffan, has not been removed.

I have also to report, that the mode of working the tender-break of the Victoria engine by means of a lever, on which a breaksman stands, has not been altered.

I saw the four-wheeled engine that had been hired from the Midland Company to work on the Ingleton and Skipton portion of the line; it had the appearance of having been a long time in use without having undergone any thorough repair; I therefore took the opportunity of being in Leeds to inquire of Mr. Marsden, the locomotive Superintendent of the Midland

Company at the station, its character, and he assured me that it had undergone a thorough overhauling about four months since, and that it was in good working order, and much more powerful than any of the North Western Company's engines.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

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North Western
Railway.

Office of Commissioners of Railways, Whitehall,
November 29, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Captain Wynne's Report of his inspection of the rolling stock of the North Western Railway Company, and to request you to state the earliest day by which you consider the stock in question will be in a fit state for re-inspection by an officer of this department.

I have, &c.,

To the Secretary
of the North Western Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

Settle, December 10, 1849.

I AM instructed to inform you that all our arrangements at Lancaster are now completed, and the rolling stock and junction line ready for the examination of an inspecting officer.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

W. WHELON, Secretary.

SIR,

Lancaster, December 17, 1849.

I HAVE this day given to Capt. Laffan the particulars of the four locomotive engines employed in working the traffic on the portion of our line between Skipton and Ingleton, and of the three engines employed on the line between Lancaster and Wennington, including the the Morecombe Branch; and I am instructed by the Directors of this Company to give you their assurance, that the number of engines above stated shall be fully maintained until the new arrangements are made for opening the line throughout.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

W. WHELON, Secretary.

Office of Commissioners of Railways, Whitehall,
December 20, 1849.

SIR,

I HAVE the honour to report to you, for the information of the Commissioners, that, in compliance with the instructions conveyed to me in your letter of the 11th instant, I inspected, on Monday the 17th instant, the extension of the North Western Railway, from the Lancaster station of that line to the junction with the Lancaster and Carlisle Railway, near the latter Company's Lancaster station; and that, on the same day, I re-inspected the rolling-stock with which the North Western Company propose to work their line between Lancaster and Wennington, the branch to Paulton, and the extension now proposed to be opened.

The length of the extension is 41 chains. Of this distance, 4 chains forming the junction with the North Western, and 2 chains forming that with the Lancaster and Carlisle Railway, are horizontal. The intermediate 35 chains are on a gradient of 1 in 78, descending from the Lancaster and Carlisle to the North Western Line.

The extension is constructed in accordance with the Parliamentary plans and sections.

The works are light:—22 feet is the height of the highest embankment, and 13 feet the depth of the deepest cutting. The material in both cases—clay intermixed with gravel.

There is but one over-bridge, a light wooden one for foot-passengers. There are two under-bridges for roads. The first is a skewed bridge, angle 62°, spans 29 and 33 feet. Each rail is borne by two cast-iron flat girders, the united strength of which gives a breaking weight of 72½ tons, while the greatest load will be 16½; proportion 4·39 to 1. The second is also a skewed bridge, angle 62°, spans 18 and 20·3 feet. In this there is but one girder to each rail; breaking weight 49·26 tons, greatest load 10·15 tons, proportion 4·85 to 1. These bridges are as strong as the greater proportion of cast-iron girder bridges hitherto constructed; and as the trains passing over them will be proceeding at slow speeds, I consider them perfectly safe.

There is one viaduct, called the Quay Viaduct, consisting of 10 segmental arches, 30 feet in span, with a rise of 8 feet. The foundation abutments and piers are in stone, the arches in brick. Eight of the openings are built up as high as the springing of the arches, and two only admit the wash of the tide. I believe this structure to be sufficiently strong.

There is but one level crossing—a private crossing between fields.

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Railway.

The extension is completed as a single line ; but the Company have purchased sufficient land, and have made the works of sufficient width, to add hereafter a second line.

The junctions are protected by distant signals, worked by wires from the points on either line.

I recommend that all trains descending from the Lancaster and Carlisle Junction should be restricted to a speed of five miles an hour, that they may have the power of stopping on the steep incline.

With this precaution, I am of opinion that the extension may be opened with safety ; and I beg to recommend that permission be given to the Company to open it accordingly.

With reference to the rolling-stock, I have already reported that, in my opinion, the Company had a sufficient number of passengers' carriages. The stock of locomotives now on the Lancaster portion of the line, consists of three—one a six-wheeled engine, and the remaining two, four-wheeled ones. The six-wheeled engine appears to be a good one, and is in fair repair. The four-wheeled ones are old engines, purchased from other lines when a better class of engine was adopted. I do not think the Company are acting wisely in commencing with an old and practically worn-out stock ; but still with a light traffic these engines, with the assistance of the better six-wheeled one, may be sufficient to work the Lancaster portion of the line till new arrangements are made on the line being opened throughout ; and I, therefore, see no reason to recommend that the opening be postponed on account of insufficiency of rolling-stock. The number of locomotives employed upon the latter portion of the line from Skipton to Ingleton has also been increased, and four engines are now at work upon that portion of the line.

I annex the description of the locomotives furnished me by the Secretary.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Lancaster, December 17, 1849.

Locomotive engines engaged in working the traffic on the North Western Railway.

Ingleton and Skipton, section 25 miles.

- | | | |
|-----------------------|--|-------------------------------|
| 1. Duchess, | 4-wheeled engine, | } the property of Mr. Sharpe. |
| 2. Friar, | 4 " do. | |
| 3. No. 16, | 4 " do. | |
| 4. Midland Company's, | 4 " coupled engine, hired by Mr. Sharpe. | |

Lancaster and Wennington, 10 miles ; and Morecombe branch, 4 miles.

- | | | |
|-------------------|----------------------------------|-------------------------------|
| 1. Victoria, | 4-wheeled engine, | } the property of Mr. Sharpe. |
| 2. No. 34, | 4 " do. | |
| 3. North Western, | 6 " do., hired by the Directors. | |

Capt. Laffan, R.E.,
&c. &c.

W. WHELON, Secretary.

Office of Commissioners of Railways, Whitehall,
December 21, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you that, on considering the report made to them by Capt. Laffan on the extension of the North Western Railway, from the Lancaster station to the junction with the Lancaster and Carlisle Railway, and on the present state of the working stock of the Company, and on considering also your letter of the 17th instant, forwarded through Capt. Laffan, they no longer object to the use of line between Lancaster and Wennington, the opening of which was ordered by them to be postponed ; and that they approve of the opening of the extension above mentioned for public traffic. With reference to the latter, however, I am to request the attention of the Company to the following extract from Capt. Laffan's Report:—

"I recommend that all trains descending * * * * * steep incline."

I have, &c.,

The Secretary to the
North Western Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

Appendix No. 46.

Edinburgh, Perth,
and Dundee
Railway.

APPENDIX No. 46.

EDINBURGH, PERTH, AND DUNDEE RAILWAY.

SIR,

Edinburgh, November 14, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that on my arrival here last night, for the purpose of inspecting to-day the last portion of the Dunfermline Branch of the Edinburgh, Perth, and Dundee Railway, extending from Crossgates to Dunfermline, I was informed by the engineer to the line that the works were not completed. As the date of the Company's second notice, however, will very soon expire, I thought it necessary to proceed with my inspection, in order that the opening might, if necessary, be postponed.

On going over the line to-day, I found that the permanent way was in very bad order ; the station arrangements incomplete ; the works at the level crossing of the Halbeath Tramway

still in progress; and those at the crossing of the Townhill Tramway not yet begun. I beg, therefore, to recommend that the opening of this portion of the Dunfermline be postponed; inasmuch as such opening, if it took place on the day named in the Company's second notice, would, in my opinion, be attended with danger to the public, by reason of the incompleteness of the works and of the permanent way.

The Company have made some material deviations in the gradients and levels of this portion of their line, more particularly at the points where it crosses the tramways. The Parliamentary section of the line at these points appears to have been extremely incorrect. I am of opinion that the great errors in the levels shown on the Parliamentary section, and the deviation made in the levels and gradients, should have been submitted to the Commissioners prior to my inspection; and I beg to recommend that the Secretary to the Company be requested to furnish detailed information as to the amount of error in the Parliamentary section, and as to the extent and reasons for the deviations in the levels and gradients prior to the second inspection of the line. I have also requested the engineer to furnish me with correct cross sections showing the gradients of the tramways for a considerable distance on each side of the level crossings.

I have made some suggestions to the Company's engineer as regards the construction of some of the works, and the number and position of the signals at the tramway crossings, to which he has promised to attend, and which can be described more fully in a future report.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

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Edinburgh, Perth,
and Dundee
Railway.

Office of Commissioners of Railways, Whitehall,
November 16, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Captain Laffan's Report of his inspection of the Dunfermline Branch of the Edinburgh, Perth, and Dundee Railway, from Crossgates to Dunfermline, and to inform you that, for the reasons therein stated, they have postponed the opening of the line in question for the purposes of public traffic for one month from this date.

I am also to request the explanation of the Company with respect to the unauthorized deviation from the Parliamentary plans referred to in Captain Laffan's Report.

I have, &c.,

The Secretary of the
Edinburgh, Perth, and Dundee Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

Edinburgh, November 22, 1849.

REFERRING to my letter to you of the 20th instant, I now beg leave to send you subjoined statement by the Company's engineer, with respect to the alterations on the levels of part of the Dunfermline Branch about to be opened. I also send the plan showing the sections referred to in the statement.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

HENRY LEES, Secretary.

COPY LETTER from the Engineer of the Edinburgh, Perth, and Dundee Railway to the Secretary.

Edinburgh, November 22, 1849.

Dunfermline Branch.

DEAR SIR,

THE following is a statement of the alteration of levels on the Dunfermline Branch referred to in Captain Laffan's Report to the Railway Commissioners:—

HALBEATH TRAMWAY, 13 miles 5·64 chains:

	Ft.	In.
Error of levels in Parliamentary plan (1845)	2	0
Vertical deviation caused by crossing the tramway at a lower level	5	4
Total vertical deviation from Parliamentary plan (1845)	7	4

TOWNHILL TRAMWAY, 13 miles 33·55 chains:

Error of levels in Parliamentary plan	6	6
Vertical deviation caused by crossing the tramway at a lower level	4	8
Total vertical deviation from Parliamentary plan (1845)	11	2

SHEEPHOUSE-WELL BRIDGE, 13 miles 67·82 chains:

Error of levels in Parliamentary plan of 1845, which is the total amount of vertical deviation	11	4
--	----	---

POINT, 14 miles 47·30 chains:

Total vertical deviation from Parliamentary plan (1847)	5	6
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Holbeath Crossing.

You will see from the above statement, that 2 feet of the deviation is simply an error in the Parliamentary section, the remaining 5 feet 4 inches is caused by crossing the tramway at a lower level at a point 51 yards to the south of that shown upon the Parliamentary plan. I may explain that this diversion of the line to the southward was made with the intention of crossing over both the Holbeath and Townhill tramways, and it was only after the notices were served, and the whole of the land purchased, that the Company found the proprietors of the tramway would not permit them to cross as they intended.

Townhill Crossing.

The error of 6 feet 6 inches in the Parliamentary section is the cause of the vertical deviation at this point exceeding the limits of deviation allowed by the Railway Clauses Act.

At the crossing of the public road near Sheephouse-Well, 13 miles 67·82 chains from Thornton Junction, which is the point where the "Deviation and Extension Line," 1847, commenced, the level of the line is 11 feet 4 inches lower than the level shown upon the Parliamentary section of 1845, but is upon the same level as shown upon the section of the "Deviation and Extension Line," 1847. This discrepancy arises from an error to that extent in the section of 1845 which rendered it impossible to keep within the vertical limits in one case without exceeding them in the other.

At the point 14 miles 47·30 chains from Thornton Junction, the line is lowered 5 feet 6 inches, which was done to get material to fill up the embankment near Dunfermline.

Trusting that the above explanation will be satisfactory to the Commissioners.

I have, &c.,

THOMAS BOUCH, *Engineer.*

SIR,

Edinburgh, December 6, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that in compliance with the instructions conveyed to me in your letters of the 22nd and 24th ult., I re-inspected yesterday, and again to-day, a portion of the Dunfermline branch of the Edinburgh, Perth, and Dundee Railway, extending from the Crossgates Station to the terminus at Dunfermline, a distance of 3 miles and 47·27 chains.

Of this distance 2 miles and 10·82 chains belong to the Act of 1845; but the plans and sections accompanying that Act are so incorrect, that this portion of the branch can scarcely be said to have been executed in accordance with them. The remaining 1 mile and 36·45 chains belong to the Deviation and Extension Act of 1847. These latter plans and sections appear to have been correctly taken, and the section at the point of junction with the section accompanying the Act of 1845, shows the latter to have erred in the levels to the extent of 11·4 feet.

The plan accompanying the Act of 1845 shows the distance from Crossgates to the commencement of the deviation to be 2 miles and 16 chains. The section accompanying the same Act shows the same distance as 2 miles and 23·5 chains; thus presenting a discrepancy between the section and plan of 7½ chains. It now appears that both were wrong; for the amended plans and sections agree in giving the same distance to be 2 miles and 10·82 chains.

As a necessary consequence of the incorrectness of the Parliamentary plans and sections, the line, as executed, shows deviation both in the levels and gradients, overpassing the limits prescribed in the public Acts; and, unfortunately, these deviations occur, and materially affect the working of the line, at the points where it crosses on the level the tramways at Holbeath and Townhill.

These tramways are 616 yards apart at the points where the line crosses them, and the Parliamentary section shows the gradient to descend from Crossgates to the Holbeath crossing at 1 in 110·3, and to continue at the same descent till it passes the Townhill crossing. Instead of these gradients, the line, as constructed, descends from Crossgates to the Holbeath crossing at the rate of 1 in 101·3, and then passes on to the Townhill crossing at a gradient of 1 in 92·1. This increased steepness in the approach to the Holbeath crossing, and in the distance between that and the Townhill crossing, appears to me to call for additional precaution to provide for the security of the traffic.

On the portion included in the Extension and Deviation Act of 1847, the plans and sections of which appear to have been correctly taken, the line, as executed, still shows a deviation both in level and gradient, exceeding the limits prescribed. At 14 miles and 47·3 chains from the junction of the Dunfermline branch with the main line, or about midway in the length of this extension, the level has been lowered 5·6 feet to procure from the cutting rendered necessary by this alteration the materials required to form the embankment near Dunfermline; and, in order to rise from the level thus lowered, an ascending gradient of 1 in 130 has been substituted for one of 1 in 385·5 for a distance of 18 chains. I do not think, however, that this latter deviation materially affects the character of the line.

I return to you herewith the statement of the engineer to the line, explaining the reasons for the deviation.

At the commencement of this last portion of the Dunfermline branch, on leaving the Crossgates Station, the line passes through a cutting 40 feet deep, of which 20 are through shale mixed with sand, and 20 through free-stone, which is traversed by a seam of coal. This cutting, 21 chains in length, is the heaviest on this portion of the line. The greatest embankment is 57 chains in length and 34 feet high. The cuttings are dry, and the embankments appear to stand well.

The line, as now completed, presents a double line for a distance of 5 furlongs from Cross-

gates, and thence to the Dunfermline terminus a single one, with sidings at the Holbeath tramway crossing, at the Townhill tramway crossing, and at the terminus. The cuttings, embankments, bridges, and other works, are executed as for a double line, and the Company propose to lay the rail of the second line as soon as practicable.

There are two over-bridges, both elliptical arches of free-stone ashlar set in lime, there are four under-bridges, two of which are cast-iron girder-bridges of small span (12 and 15 feet) and ample strength; the third is also a cast-iron girder-bridge, but the span is 25 feet, and when I first inspected this branch, there was only one girder to each rail, the breaking weight of which, as calculated by Mr. Hodgkinson's rule, was 42 tons, while the load was 124. This proportion, though not so small that I could pronounce it unsafe, was still less than the experience of engineers leads them to adopt in cast-iron bridges now constructed; and on my pointing this out to the engineer to the line, he agreed with me, that it would be better to strengthen the bridge. As the line now to be opened over it is only a single one, and there were girders for two lines, he proposed, and has since completed the taking up the girders of the second line and adding them to those that bear the present rails. Each rail, therefore, is now borne by two girders, which gives ample strength, and when the second line comes to be laid, girders of stronger section will be provided for it. The fourth under-bridge is a cast-iron arch of a segmental form, 35 feet in span on the square, and 42' 8" on the skew; the rise is 4' 6". I am of opinion, that all these bridges are sufficiently strong; but there is one circumstance connected with the last—the cast-iron arch—which I would wish to point out to the attention of the Commissioners.

The form of section for a cast-iron curved rib, which I have found to be generally adopted by engineers is as in the margin, presenting a kind of flange both at top and bottom; but in the bridge now under consideration, the section of the rib is of the form and dimensions annexed, showing a flange at bottom but none at top.

On trying the deflection produced in this rib by the weight of a single engine and tender, I found that it amounted to three-eighths of an inch, which is as much as I have been able to obtain by using far heavier loads on bridges of the other form of rib, with spans of from 90 to 120 feet. Nor do I attribute this to any want of sectional area in these ribs, but simply to the distribution of the metal. It appears to me, that when a curved cast-iron rib is deflected by a weight in the centre, there is a tendency to rise at the haunches, and, consequently, to expand the upper surface of each haunch. This tendency to expansion is resisted by the upper flange of the ribs generally used; the haunches are thereby prevented from rising to the same extent that they would if no flange were there, and, as a necessary consequence, the centre cannot deflect so much. In the ribs of this bridge there is no upper flange to resist the rising of the haunches, and the deflection is unusually great. I would draw from this the conclusion, that the form of rib more usually adopted is the best.

Four roads are crossed on the level by this portion of the Dunfermline branch; one only, however, is a public road, and on this the gates close across both road and rails, and the crossing is provided with a gatekeeper. The others are merely occupation-crossings.

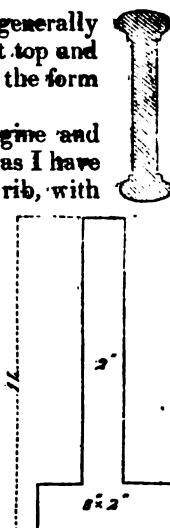
The tramways at Holbeath and Townhill are also crossed on the level; and, as I have before stated, the increased steepness of the gradients at these points materially affect the management of the traffic. The tracing which accompanied the Secretary to this Company's letter to you of the 5th ult., shows the arrangements made by the engineer to the line to diminish as far as possible the danger arising from these crossings; but as the information conveyed in that tracing appears to me incomplete, I enclose, herewith, a second tracing, showing the gradients of the tramways for some distance on either side of the Dunfermline branch. It will be seen that these gradients, descending towards the railway on either side, form important elements in estimating the value of the precautions used.

Those precautions are as follows:—Gates are erected at both crossings, closing across the tramways, and when opened to allow the tramway trucks to pass, closing across and fencing in the Dunfermline branch. At Holbeath there are four gates, and at Townhill two, and they are all so arranged, by means of ropes and cylinders working under the ballast, that the opening or shutting one arm at each crossing opens and shuts the rest. About 60 yards from the gates of each crossing on the north side, where the descending gradients of the tramways are steep, safety sidings have been added to the tramways, the switches or points of which are worked by ropes passing round the cylinders beneath the gates; so that when the gates are closed across the tramways, any trucks on those tramways which should have escaped from the control of the guides must enter the safety sidings, where, if not brought up by a short and steep ascending gradient, with timber buffers at the end, they will at any rate, only be themselves destroyed, and cannot endanger any train which may be passing at the time. When, however, the gates are opened for the tramway and closed across the branch, the same action of the gatekeepers opens the switches of their sidings to leave the tramways clear. This arrangement appears to me to be a good one, if the mechanical arrangements will be attended to to ensure their always acting freely. I have requested the engineer, and he has promised me, to fix large and conspicuous white discs by day, and lamps by night, to the handles of these safety switches, that the gatekeepers may see at once whether the opening or shutting the gates ensures the proper action of the points.

On the south side of the crossings, the plan furnished you by the Secretary shows no precautions to provide for such a contingency as the tramway trucks coming down the descending gradients at such a speed as to endanger the gates, together with any train that might be passing at the time. On the south side, the descent of the tramways is not so steep, and

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 Railway.

there are short portions of ascending gradients, which would tend still further to diminish the speed with which such trucks would reach the gates; yet I am of opinion that it would not be advisable to dispense with precautions on the south side. On conferring with the engineer to the line yesterday upon this subject, I informed him of my opinion, and he engaged to place what are called chock-blocks upon one rail of the tramways, at 15 yards from the gates on the south side of each crossing. The effect of these will, in my opinion, be to stop, or if not to stop, to throw off the line of the tramway any trucks which should come against them, and thereby prevent them endangering the trains or gates. I went over the branch again this afternoon, to see these chock-blocks in place, and they are now complete.

The crossings, as far as the trains are concerned, are protected by semaphore signals, distant 400 yards to the eastward of the Holbeath crossing, and the same distance westward of that at Townhill, with a third situated half way between them. These signals, which are worked by wires from the crossings, are always at the "caution" signal; and I have requested the engineer to fix a board to the two outer ones, with "shut off steam" written thereon in large letters, and to make it a regulation with the engine-drivers upon this branch, that they shall always shut off steam at these signals, and approach the crossings with great circumspection, applying the tender-break when necessary, so as to have their trains thoroughly under command. When the semaphore is raised to the stop signal, they are, at once, to stop their trains, and on no account to approach the crossings till the arm is again lowered to its permanent position of "caution." In descending from the Holbeath station to the Townhill crossing, no train should be allowed to attain a higher speed than 5 miles an hour; those ascending need not be so restricted, so long as the present regulation is in force, which enjoins all trains to stop at the Holbeath station.

I have now described all the precautions that are, at present, provided for obviating the risks inseparable from these crossings. The engineer is about to fix chock-blocks, similar to those on the south side, to the rails of the tramways on the north side also; this will be an additional security in the event of the points failing to act.

The Company proposed originally to open the whole of this new portion as a single line; but it appeared to me more advisable to recommend, that the first 5 furlongs from Crossgates, along which the second line was laid, should be opened and worked as a double line, and that the remainder only should be opened as a single one. My reasons for this were, that in those first 5 furlongs the railway is joined by three lines leading from a neighbouring colliery, and that if this part were worked as a single line, these colliery lines would present facing-points to the trains. By working it as a double line, this danger is obviated, as the points will then be with the traffic. It will be necessary to station a pointsman at the beginning of the single line, and his orders must be, never to allow two engines to be together on the line westward of him. If one engine has already passed, he must detain the next till it comes back.

The switches of the sidings at the tramway crossings, which must necessarily present facing-points to the traffic either going or coming, are invariably to be kept locked, and the keys must be kept by the men at the crossings, who are only to open them when the engine that happens to be on the single line requires to put in or take out trucks.

With these precautions for the safety of the traffic, and with the understanding that all the arrangements and regulations herein described are to be maintained, I am of opinion that permission may be given to the Company to open this last portion of the Dunfermline branch as a double line for the first 5 furlongs from Crossgates, and as a single one for the remaining distance, inasmuch as it appears to me that these steps being taken, the Company will have done all that lies in their power to diminish the risks arising from the working of a single line, and the two dangerous tramway crossings.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

R. M. LAFFAN,
 Capt. Royal Engineers.

*Edinburgh, Perth, and Dundee Railway Office,
 Edinburgh, December 6, 1849.*

I, HENRY LEES, Secretary, and on behalf of the Edinburgh, Perth, and Dundee Railway Company, seeing that Capt. Laffan, the Inspecting Engineer appointed by the Railway Commissioners to examine and report on that part of the Dunfermline Branch Railway between Crossgates and Dunfermline, having, on his inspection thereof, suggested to the engineer of the Company that, in order to guard more effectually against accidents, a set of chock-blocks be placed upon the Holbeath and Townhill tramways, immediately to the south of their respective points of intersection with the said branch railway, and this having been done, and Captain Laffan having further required an engagement on the part of the Company that the said chock-blocks should continue, I hereby, on the part of the Company, engage that the same shall be so continued, on the understanding that, if at any time an alteration should be found necessary, a communication shall be made to the Commissioners, stating the circumstances, with a view to their sanction being obtained.

HENRY LEES,
 Secretary.

SIR,

Office of Commissioners of Railways, Whitehall,
December 8, 1849.

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Railway.

I HAVE been directed by the Commissioners of Railways to inform you that, after considering Capt. Laffan's Report of his inspection of the Dunfermline branch of the Edinburgh, Perth, and Dundee Railway, from Crossgates to Dunfermline, and the engagement signed by yourself in reference to the maintenance of the chock-blocks referred to in that Report, they have no objection to the line in question being opened for the purposes of public traffic; but I am, at the same time, to transmit to you the enclosed extracts from Capt. Laffan's Report, and to request you to call the attention of the Directors of the Company thereto.

I have, &c.,

The Secretary of the
Edinburgh, Perth, and Dundee Railway Company.H. D. HARNESS,
Capt. Royal Engineers.

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Appendix No. 47.

South Staffordshire
Railway.

SOUTH STAFFORDSHIRE RAILWAY.

SIR,

December 1, 1849.

I HAVE to report, for the information of the Commissioners, that I yesterday inspected the South Staffordshire Railway, from a junction on its Birmingham branch, 1 mile 15 chains, from Walsall to its junction with the Oxford, Worcester, and Wolverhampton Railway at the town of Dudley, the distance being 5 miles 21·5 chains.

The district through which this line runs is peculiarly circumstanced, lying over the great 30 feet bed of Staffordshire coal, which throughout a great part of the course of the railway has long been worked out, and the pillars and ribs left in to support the roof are now in course of removal. This bed lies at the depth of between 40 and 90 yards; besides this great bed, there is another at a less depth (about 20 yards), 2 feet 6 inches thick, which has been likewise nearly worked out; the consequence is, that on each side of the railway the surface of the ground presents a series of circular hollows or indentations caused by what is here termed the crowning in of the ground; the embankments of the railway have all sunk several feet, and most of the bridges are more or less affected; some exhibit cracks caused by the settling, and others have sunk bodily and shown no cracks; this peculiar state of things will require extraordinary care in watching the line both above and below ground, after the line shall be opened, in order to ensure the public safety, and I shall be prepared after another inspection, which will be necessary, to make such recommendations as the peculiar circumstances of the line call for.

I found the permanent way laid throughout, but generally in a rough state, and many parts insufficiently ballasted; the station arrangements, with regard to platforms and signals, were incomplete. A large culvert, 28 feet span, at the bridge crossing the London and North Western Railway, had not the centres removed. And at 2 miles 17 chains an under-bridge, the abutments of which were 22 feet high, was in a dangerous state from the west abutment being thrown out of the perpendicular, caused by the pressure of the embankment: it is at present shored up, but will have to be taken down and rebuilt. I shall defer entering into a description of the bridges, which have suffered more or less from the subsidence of the ground, until my next inspection of the line, when I shall be better prepared to form an opinion whether the cause from which they have suffered is still in action. I have now to report that, owing to the unfinished state of the permanent way, the dangerous state of the bridge at 2 miles 17 chains, and the incompleteness of the station arrangements, as regards platforms and signals, that in my opinion the line cannot be opened without danger to the public using the same, and I recommend that the opening of it may be postponed.

I have to report the following deviations beyond the Parliamentary limits:—

First, in the gradients:

At 3 miles 6·65 chains, a gradient of 1 in 177 and 45 chains in length has had a gradient of 1 in 100 of 9 chains length, and 1 in 60 of 2 chains length introduced into it; in the remaining length the gradient has been improved.

Secondly, in the curves:

At Dudley station a curve of 15 chains radius has been substituted for one of 20 chains.

And at Greatbridge station a curve of 20 chains has been substituted for one of 54 chains.

The direction of the line also, at 4 miles 50 chains, passes a little beyond the limits of deviation for 50 chains.

I do not consider that any of the above deviations are of an objectionable character.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

January 16, 1850.

I HAVE the honour to report to you, for the information of the Commissioners, that I yesterday re-inspected the extension of the South Staffordshire Railway to Dudley, commencing about two miles from Walsall.

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South Staffordshire
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Commencing from the bridge which carries the extension over the London and North Western Railway, I found the permanent way for a considerable distance towards Dudley so broken up, that it was not safe to take an engine over it. Finding the line at the commencement in this state, I did not feel it necessary to prosecute my inspection further; and I have only now to state that, from the incompleteness of the permanent way alone, I am of opinion that the line cannot be opened without danger to the public using the same, and I beg to recommend that the opening may be further postponed.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

GEORGE WYNNE,
Capt. Royal Engineers.

Appendix No. 48.

Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield, and Goole Railway.

APPENDIX No. 48.

SHEFFIELD, ROTHERHAM, BARNSLEY, WAKEFIELD, HUDDERSFIELD, AND GOOLE RAILWAY.

SIR,

Whitehall, December 15, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that, having received their instructions to inspect that portion of the Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield, and Goole Railway which extends from the station at Barnsley to the junction with the Lancashire and Yorkshire Railway near Horbury, and including the Silkstone branch, on the 14th instant, I accordingly proceeded to Normanton with the intention of inspecting the line, but was there met by the Deputy-Chairman of the Company and the resident engineer, who informed me that the line was not in a fit condition for inspection, and who requested me, therefore, to postpone the inspection to a future day. They further informed me that the engineer had written to me on the 10th instant, to the effect that the line would not be ready for inspection on the 14th, which letter, by some mistake, had not come into my hands. I therefore felt it my duty to act up to the instructions of the Commissioners, and to inspect the line on the day appointed by them, and accordingly went over a portion of it, commencing from the junction of the Lancashire and Yorkshire Railway at Horbury.

I found that the junction was in an imperfect state, and the permanent way not completed, and, generally, a great deficiency of ballast and incompleteness of works; and I have therefore to report that, in my opinion, the opening of the same will be attended with danger to the public using the same by reason of the incompleteness of the works and permanent way. I did not go over the whole of the line, having seen in the part which I inspected sufficient ground upon which to make the above report.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

J. L. A. SIMMONS,
Capt. Royal Engineers.

SIR,

Whitehall, December 26, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that, in compliance with their appointment, I re-inspected, on the 22nd instant, the line of the Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield, and Goole Railway, from the junction with the Lancashire and Yorkshire Railway at Horbury to the town of Barnsley, a distance of 8 miles 62 chains. The line is single throughout, with the exception of a short length of about 200 yards at the junction with the Lancashire and Yorkshire, and short sidings at the intermediate stations. I found the line in every way ready to receive the public traffic, and was informed by the engineer that it is to be worked by the Lancashire and Yorkshire Railway Company, who propose to carry on the traffic so that one particular locomotive engine shall be with every train.

I also inspected the Silkstone branch of this same railway, 1 mile 54 chains in length, which is also a single line, and intended only for use as a mineral and goods line. I have to report that I am aware of nothing to prevent the opening of this line and branch with safety to the public whenever the Company may desire to do so.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

J. L. A. SIMMONS,
Capt. Royal Engineers.

Appendix No. 49.

London and North
Western Railway
(Clifton Branch.)

APPENDIX No. 49.

LONDON AND NORTH WESTERN RAILWAY.—(Clifton Branch.)

SIR,

December 19, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that I this day inspected the Clifton branch of the London and North Western Railway, which commences at the Patiecroft station on the Liverpool and Manchester Railway, and runs into the East Lancashire Railway at Clifton, its length being 3 miles 46 chains.

I found the line, from the commencement of the tunnel to where it joins the East Lan-

cashire Railway, deficient in ballast, and the rails very much out of adjustment. I must therefore report that, owing to the incompleteness of the permanent way, I am of opinion that the line cannot be opened without danger to the public using the same; and I recommend that the opening of it be for the present deferred.

Appendix No. 49.
London and North
Western Railway.
(Clifton Branch.)

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

January 1, 1850.

I HAVE the honour to acquaint you, for the information of the Commissioners, that on the 29th of last month, I re-inspected the Clifton branch of the London and North Western Railway, and I found the ballasting of the line had been completed since my last inspection, and the rails placed in proper adjustment.

The principal work on the line is a tunnel 1,298 yards in length, the formation through which it passes is loose sand and marl, lying over the coal-measures; the sand in some places approaches the nature of a quicksand, and in these parts a good deal of difficulty was experienced in making the tunnel, and much water still passes through the brickwork. The tunnel is of brick, three brick thick, set in mortar of blue-lias lime, with the exception of the crown of the arch, which is set in Roman cement; there is an invert two feet thick, and the tunnel is drained by a central drain laid on the invert; the exterior appearance of the work gives every reason to suppose that it has been properly constructed.

There are four bridges under the railway, which are spanned by iron girders; one is 25 feet wide; the other three 12 feet wide; the three latter are occupation bridges, and the one of 25 feet span crosses a public road known as Slack-lane; they are all of sufficient strength.

There is a large cast-iron-girder bridge passing over the line, which carries the Manchester and Bolton Railway, it is made of sufficient width for four lines; the girders are placed in pairs, trough fashion, at 10 feet intervals; these intervals are spanned by 6-inch planking resting on the flanches of the girders, and carry a line of way; the rails are carried on longitudinal timbers 12 x 8, laid on the planking, and the whole is ballasted over. In the trough of the girders lies a balk 20 x 16, and the girders are bolted through this to one another; the girders are 2 feet 6 inches deep, the bottom flanch is 18 inches wide, and the top flanch 4 inches. The thickness of metal throughout is 2 inches; the span of the bridge is 40 feet; the breaking weight of a pair of these girders, for a distributed load, is, by calculation, 233 tons; the permanent load they have to support, including their own weight, I suppose to be 27 tons; the moving weight, I take at 35 tons.

The investigations of the Commission appointed by Her Majesty's Government to inquire into the strength of iron, having reference to its application to railway structures, have led them to the conclusion, "that cast-iron-girder bridges, where the ultimate strength is the only question for consideration, may be subjected to a permanent load at rest equivalent to one-third of its central breaking weight; but that considering the effects which moving loads may produce, it is recommended that the greatest load in railway bridges should in no case exceed one-sixth of the weight which would break the beam when laid on it at rest in the centre." They likewise recommend a still further increase of strength for beams subject to loads moving at high velocities; but as the bridge in question does not fulfil the first of these conditions, I have not thought it necessary to enter upon the second.

According to the rule above laid down, the breaking weight of the pair of girders, for a distributed load should be—

$$\begin{aligned} \text{Three times the permanent load} &= 3 \times 27 = 81 \text{ tons.} \\ \text{Six times moving load} &= 6 \times 35 = 210 \text{ tons.} \\ \hline &291 \text{ tons.} \end{aligned}$$

Which I suppose composed of one engine; and part of another following, and which in a bridge of this span may be considered as a distributed load.

$$\begin{aligned} \text{Calculated breaking weight of a pair of the girders for} \\ \text{a distributed load} &= 233 \text{ tons.} \end{aligned}$$

$$\begin{aligned} \text{Deficient in strength} &= 58 \text{ tons.} \end{aligned}$$

I must therefore report that, owing to the want of strength in the bridge which carries the Manchester and Bolton Railway over the Clifton branch, that I am of opinion that the latter railway cannot be opened without danger to the public using the same.

And the danger incurred by the public using the Manchester and Bolton Railway will be much greater.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
GEORGE WYNNE,
Capt. Royal Engineers.

SIR,

Railway Office, Lime-street Station, Liverpool,
January 9, 1850.

I AM instructed to acknowledge the favour of your communication of the 2nd instant, with copy of Captain Wynne's Report of his re-inspection of the Clifton branch, and informing

	Tons.
* Girders	10
Timber	5
Ballast	12
	27

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me that the Commissioners of Railways, for the reasons stated by Captain Wynne, had further postponed the opening of the line.

The Directors immediately forwarded your communication and its enclosure to Mr. Edward Woods, the engineer for the Clifton branch, and I have now the honour to transmit you Mr. Woods' reply, with his reasons, in detail, for considering the strength of the bridge objected to amply sufficient.

As Captain Wynne may not have been aware of the process of construction (by the combination of timber with the ordinary cast-iron girders), as well as of some other points of detail, which Mr. Woods explains, the Directors trust that, on consideration of all the circumstances of the case, the Commissioners will authorize the transit of passenger traffic over the Clifton branch.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

H. BOOTH, Secretary.

DEAR SIR,

Liverpool, January 7, 1850.

I HAVE before me the official Report of Captain Wynne of the result of his examination of the Clifton branch, commenting particularly on the insufficiency of the girder bridge which carries the Manchester and Bolton Railway; in consequence of which alleged want of strength Captain Wynne considers that the line cannot be opened without danger to the public.

The expression of this opinion renders it my due to the Directors to offer some observations upon the construction of the bridge with reference to Captain Wynne's comments thereupon, not merely because the delay in opening the line will be productive of inconvenience and loss to the Company, but more especially because a considerable amount of responsibility has already been incurred, the entire traffic of the Manchester and Bolton Railway having, for the last twelve or thirteen months, been conducted over this bridge.

I much regret that no reference should have been made to the supposed weakness of the bridge either in Captain Wynne's first Report (which appeared to give his entire sanction to the works of the line, subject to the completion of the ballasting and adjustment of the permanent way), or at the time of the second visit of inspection; as I believe a comparison of notes between us, and perhaps a close examination of the bridge when under the influence of passing trains, might have led to the removal of any doubts in Captain Wynne's mind of its security.

The objection urged by Captain Wynne is founded upon a comparison of the calculated ultimate strength of the girders in relation to the load they have to sustain; with a recommendation of the Government Commissioners as to the proportion which, in their opinion, should be observed between the strength of a railway bridge girder and its greatest load.

I believe that no two engineers have hitherto been agreed as to the exact proportion which should be observed; and, in the absence of any general rule sanctioned by high authority, each engineer has been left to determine for himself the proportions proper for any given case, partly from precedent, and partly from the formula of those who have devoted their special attention to experiments on the subject.

I have been guided in this manner in the present case, and considering the importance of the bridge as at a crossing of two lines of railway, have given to it what I deemed a more than ample allowance of strength.

It must be satisfactory to any one intrusted with the execution of such works to find a definite rule laid down by authority for his guidance, the observance of which must materially lessen his responsibility; but it seems to me not unreasonable to demur to the principle that existing works shall be condemned by a rule not heretofore made known, and contained in a document to which I believe the public have not at present access.

Taking into account varieties in the quality of metal used in casting girders, the various ways of arranging and combining them, and that the mode of supporting the roadway may be modified so as to qualify materially the effect of impact, a rule like this can only be regarded as an average or approximate expression of the desirable relation that should subsist between strength and load, and can scarcely, I apprehend, be considered by the Commissioners as an absolute rule applicable retrospectively and indiscriminately to every case, and without regard to the particular conditions of the structure.

In designing the present bridge I had especial regard to the means of diminishing vibration and other effects of impact, and of preventing torsion of the girder arising from pressure on the lower flange.

The girders are arranged in pairs, firmly bound together upon an intervening balk of Quebec oak of very large scantling (20 inches by 16 inches), extending throughout their length. This timber serves as an elastic cushion to stop vibration, and as a lateral support to the vertical ribs, rendering the two girders into a wide compound beam, and thereby affording security against accident should one of the girders be fractured—a contingency which I can scarcely suppose possible.

The weight of the train is distributed on to longitudinal bearers (half balks) of timber, and thence on to cross-planking. The cross-planks are secured at their ends on to longitudinal planks of timber, 3 inches thick, resting continuously upon the flanges of the girders. The girders themselves are bedded on to balks of English oak, 18 inches by 12 inches, resting on the brick piers on either side.

Thus the train is received on to an elastic platform, which yields under the blows of the wheels, and acts as a system of springs to diminish the force of concussion or impact.

It appears to me unquestionable, that by the above-described disposition of the parts, the girders are subjected to much less strain by impact than they would sustain under the same loads were the rails placed in more rigid connexion with them in other ways by no means uncommon; and that, consequently, the same rule of proportion cannot be held to apply equally to all cases.

According to Captain Wynne's computation, the ultimate strength of one pair of girders is equal to 233 tons of distributed load; and the actual distributed load is

62 tons in an extreme case.

The difference (171 tons) is, according to this computation, the margin allowed to cover risk of overstraining the fibre and for impact; a margin which Captain Wynne is of opinion should be increased to 229 tons.

Should the margin be found in reality not to exceed 171 tons, I deem it abundantly ample under all the circumstances of this bridge. I believe, however, that I shall be able to prove that the margin of strength is as great as the Commissioners have recommended.

In the first place, I beg leave to correct a slight error in one of the elements of the calculation. The clear bearing of the girders or skew span of the bridge is 38 feet, not 40 feet, as Captain Wynne states it. All the other dimensions of the girders are correctly given.

Applying these several dimensions to the formula originally used in estimating the strength of these girders, and given by Mr. Eaton Hodgkinson* (perhaps the highest authority on such subjects, and a member of the Government Commission whose Report is referred to), the breaking weight applied in the centre of each comes out to be 79 tons.

The breaking weight in centre of the pair is therefore 158 tons; and the distributed breaking weight of the pair is 316 tons as against 291 tons.

Whereas Captain Wynne computes it to be only 233 tons as against 291 tons.

By my computation, therefore, each pair of girders is in reality 25 tons in excess of the assumed necessary strength, instead of being 58 tons deficient.

Captain Wynne does not give the formula from which he derives his result, and I am therefore left to suppose that he may have been guided by some other authority.

Mr. Hodgkinson gives another formula applicable to the special case of beams with very large bottom flanges and very thin vertical ribs, which would produce the result stated by Captain Wynne; but this formula is evidently inapplicable in the present instance, where the vertical part between the flanges presents a sectional area nearly one and a-half times greater than that of the bottom flange, and where, consequently, the value of the central part in affording strength to the beam cannot be neglected.

In conclusion, I may state that the whole particulars of the bridge were submitted to and approved by Mr. Hawkshaw, as engineer to the Lancashire and Yorkshire Railway Company, previous to the work being commenced; that the work was carried on under the joint superintendence of Mr. Hawkshaw and myself; that no complaint has ever reached me as to its insecurity; that a twelve or thirteen months' traffic (about 18,000 trains) has passed over it; that upon careful measurement of the deflection of the girders under the action of express and other trains, I have never found the temporary depression in the centre of any of the girders to exceed two-fifths of an inch, which depression may include some amount of compression of the timber on which the girders rest; and that this bridge is altogether one of the stiffest and most substantial of the kind that I have constructed.

I am, dear Sir,

Yours truly,

EDWARD WOODS.

H. Booth, Esq.,
&c. &c.

P.S. January 8.—Upon receiving the copy of Captain Wynne's Report, I sent to Mr. Hodgkinson, through my friend Mr. Campbell, of Manchester, a cross section of the compound girder, requesting Mr. Hodgkinson's opinion as to its ultimate strength.

Since writing the foregoing Report the following letter in reply has just been handed to me:—

(Copy.)

DEAR SIR,

Rose Hill, Pendleton, January 7, 1850.

THE falling off from perfect elasticity in cast-iron being so great as to render almost useless computations based upon that supposition as to the breaking weight of beams, we have, I believe, no rules on which any reliance can be placed but those which I gave in the additional volume to Tredgold. The former, from my "Paper on Beams," in the 5th volume of the "Manchester Memoirs," being most applicable to beams of the best form of section, in which the influence of the vertical part between the flanges might be omitted; and the latter being formed to include that part, where the thickness was such as to require it.

For the breaking weight of each of the girders, by the latter formula, we have

$$W = \frac{2}{3dl} \{ b d^3 - (b - b') d'^3 \} =$$

$$\frac{2}{3 \times 30 \times 38} \{ 18 \times 30^3 - 16 \times 28^3 \} =$$

$$\frac{1}{1710} (18 \times 27,000 - 16 \times 21,952) = 78.8 \text{ tons};$$

whence $2 \times 78.8 = 157.6$ tons = strength of the pair of girders.

The breaking weight of a girder by the formula $W = \frac{26 \times a \times d}{l}$, where all the dimensions are in,

inches is $\frac{26 \times 36 \times 30}{38 \times 12} = 61.7$ tons.

∴ $2 \times 61.7 = 123.4$ tons = the strength of the pair.

* Tredgold, "On Strength of Cast-iron," edited by Eaton Hodgkinson, F.R.S., vol. 2, page 450.

$$W = \frac{2}{3dl} \{ b d^3 - (b - b') d'^3 \}$$

where W is in tons = breaking weight.

l is in feet = distance between supports.

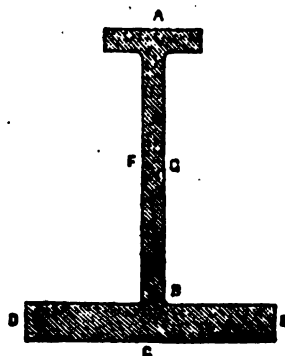
d is in inches = AC = whole depth.

d' is in inches = AB = depth to bottom flange.

b is in inches = DE = breadth of ditto.

b' is in inches = FG = thickness of vertical part, as said to be required by the Commissioners' rule.

M



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Taking a mean between the strengths from the two formula—as the former would, I think, give the result too high in this case—we have $\frac{157 \cdot 6 + 123 \cdot 4}{2} = 140$ tons, the mean breaking weight of a pair

of girders; the influence of the timber between them being neglected.

From experiments of which more will be said hereafter, it would not be safe to expose girders for a long time to vibrations from loads greater than $\frac{1}{4}$ or $\frac{1}{2}$ of their breaking weight passing rapidly over them.

Compound girders of this strength should therefore not be loaded with more than about 20 to 23 tons passing over them; perhaps scarcely that much.

If the depth of the timber be made 20 inches only, perhaps the cross-bolt should be somewhat lower than at the half depth of the beam as proposed.

I am, dear Sir,

Yours very truly,

H. Cadogan Campbell, Esq.

EATON HODGKINSON.

It will be seen by the above letter that Mr. Hodgkinson estimates the central breaking weight of the pair of girders (neglecting the influence of the timber between them) at 140 tons, equal to 280 tons distributed, preferring to take a mean between the results given by two different formulae; the first being that on which my calculation was based, and the second being the formula in which the influence of the vertical part is omitted.

It will be further seen that Mr. Hodgkinson considers that compound girders of this strength are fitted for a bridge over which the passing loads do not exceed 20 to 23 tons (applied in centre), equal to 40 to 46 tons distributed pressure.

Captain Wynne computes that the girders will not have to sustain more than 35 tons of distributed passing load.

I submit, therefore, that Mr. Hodgkinson's opinion is conclusive as to the strength of this bridge being more than sufficient.—E. W.

SIR,

January 13, 1850.

I HAVE the honour to acquaint you, for the information of the Commissioners, that I yesterday proceeded, in obedience to their instructions, to re-inspect the bridge over the Clifton branch of the London and North Western Railway, which carries the Manchester and Bolton Railway. I was accompanied by Mr. Woods, the engineer of the Clifton branch, and Mr. Hawkshaw, the engineer of the Lancashire and Yorkshire Railway.

From Mr. Woods' letter to the Directors of his Company, and which the Commissioners have forwarded to me for perusal, I find that an important error existed in the returns previously furnished to me, which gave the span of the bridge as 40 feet, instead of 38 feet.

Mr. Hodgkinson, to whom the bridge has been submitted for his opinion, in calculating the strength of the girders has adopted a mean between the breaking weight given by the formula used by me and of another which gives value to the vertical web. The mean thus taken gives the strength of a pair of the girders of the above length, for a distributed load, as 280 tons. As I have, in common with the generality of engineers, been guided in my calculations of the strength of cast-iron girders by the formula deduced by Mr. Hodgkinson from his own experiments, I can have no hesitation in adopting the strength which he assigns to them. I find, likewise, that the permanent load of the bridge is considerably less than what I calculated from the section of it furnished to me, which showed it as covered with a foot of ballast; whereas it is Mr. Hawkshaw's practice to place no more ballast on the bridge than that which is just sufficient to secure the wooden parts of it from taking fire from cinders falling on it. I have ascertained that the heaviest engines on the Lancashire and Yorkshire Railway with their tenders weigh about 32 tons; and as their length is just about equal to the span of the bridge, 32 tons may be taken as the greatest practical load (distributed). On considering the difference produced by the diminution in the length of the bridge from that formerly given to me, and the absence of this weight of ballast represented in the drawing sent to me, I believe that the bridge in its present state may be exposed to this load. I, therefore, consider that the line may be safely opened for the conveyance of passengers.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

DEAR SIR,

Swinton, January 9, 1850.

I SAW Mr. Hodgkinson last night, and asked him if the weight of the girder itself formed part of the breaking weight? He said it did not, as generally its weight was inconsiderable when compared with the breaking weight. I also asked him whether he considered the 20 to 23 tons he mentioned in his letter as the safe weight to pass over the bridge was to be considered as a distributed weight, or not? He said all the calculation was on the supposition of a central breaking-weight, and that the 20 to 23 tons was so to be considered. In thinking the matter over, I don't think it fair to take even the weight of the oak timber into account, because, in the compound girder, only one of the girders is acted upon by a train passing; and if there is any deflection in that one, the greater part, if not the whole, of the oak, is thrown on the flange of the other one, thus relieving the girder in action from its weight. Mr. Hodgkinson declined to make any charge.

I have, &c.,

Edward Woods, Esq., Liverpool.

H. CADOGAN CAMPBELL.

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Appendix No. 50.

YORK, NEWCASTLE, AND BERWICK RAILWAY.

York, Newcastle,
and Berwick
Railway.

SIR,

Newcastle, August 11, 1849.

I HAVE the honour to report to you, for the information of the Commissioners, that I this day inspected the High Level Bridge over the Tyne at this place.

I shall defer till my return to Town entering into any detailed description of this work, and shall confine myself at present to stating that all the works of the bridge are completed, and that I believe it to be perfectly secure and safe. The Company have as yet only laid one line of rails over this structure, and I beg to recommend that permission be given to open that one line.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Notes upon the High Level Bridge at Newcastle, to be appended to Captain Laffan's Report, dated August 11, 1849.

THE High Level Bridge at Newcastle bears the rails of the York, Newcastle, and Berwick Railway, over the River Tyne, at a height of 120 feet from low water, and, at the same time, affords to the inhabitants of Newcastle and of Gateshead a convenient channel of communication between those two towns by means of a covered carriage-way, with side footpaths suspended below the rails. In appearance it resembles a level tube resting upon lofty piers, the open sides, composed of double rows of square columns, enclosing within them the carriage-way and footpaths, while the railway runs along the platform at top.

The peculiar construction of this bridge has in some measure been dictated by the nature of the site. The Tyne at Newcastle runs at the bottom of a deep ravine, the sides of which are occupied by the town of Gateshead on the south bank, and the old town of Newcastle on the north. Till the present time the only means of communication between those places had been an old stone bridge at the bottom of the ravine, and carriages and foot-passengers had been compelled to descend 100 feet through narrow winding streets on the one side, and again to ascend a similar height, through equally inconvenient approaches on the other.

As the modern town of Newcastle spread out over the comparatively level ground to the northward, the inconvenience attached to the continued use of the old bridge became every day more felt, and when it became necessary to carry the railway across the river at the present high level, the engineer who was called upon to design the intended structure resolved that, in addition to meeting all the requirements of a railway bridge, it should also afford a carriage communication between the two towns, which should dispense with the necessity of descending the steep ravine.

In forming a design for this purpose the chief engineering difficulty to be considered was the nature of the foundation. The Tyne at Newcastle is 520 feet wide, with a depth of water not exceeding 3 feet at low tide. The river, however, flows over a bed of loose sand, almost of the nature of a quicksand, extending to a depth of 31 feet. Below this is a layer of coarse gravel, 4 feet in depth, resting upon 8 feet of strong yellow clay; and below this, and 46 feet from low water, we at length reach a firm foundation in a bed of freestone.

The best means of obtaining a firm footing upon such a site appeared to be to sink piles through the quicksand, the gravel, and the clay, and down into the softer upper layers of the freestone, and upon those piles to construct foundations for the basements of the piers. Such a foundation to so lofty a structure rendered it necessary that the whole design should be as light as was consistent with safety, while, at the same time, it made it desirable that some other principle than that of the ordinary arch should be adopted, lest the strain of any portion of the horizontal thrust should derange the tall and slender piers.

The principle adopted by Mr. Stevenson was, to divide the river into four openings of 125 feet by ashlar piers of a peculiarly light construction, and to span those openings by bowstring girders, composed of strong curved ribs of cast-iron tied by wrought-iron chains; the rails to be borne along an upper platform, supported by cast-iron columns from the ribs, while suspended from the same ribs by wrought-iron rods, a carriage-way, with its footpaths, should be formed near the level of the bowstring chains.

The bridge, as now constructed, consists of six openings of 125 feet, spanned by bowstring girders; of these 4, as before described, are river openings, while an additional land opening has been introduced at either end, simply as an economical means of connecting the river-works with the more solid portions of the structure—the ashlar land-arches at the sides of the ravine—which it would have been too expensive to have carried further down the descending slopes.

The land-arches at each side of the ravine consist of one semicircular arch 36 feet 3 inches in span, resting upon piers of a considerable height, and of three other semicircular arches 22 feet 9 inches in span, the piers of which diminish in height as the works ascend the bank. The remaining parts of what may be called the abutments of this great bridge, till they meet the rising slope of the ground, are formed of retaining walls filled in with earth. The arches and piers are of ashlar, and are excellent specimens of masonry; but as their construction presents nothing peculiar, they do not appear to call for a more detailed description. They rise to the level of the lower carriage-way, and the railway above is still borne upon cast-iron columns, resting upon the masonry, as before they rested upon the cast-iron ribs.

Of the five piers which divide the wider openings, four are called river-piers, while the fifth (the first on the Gateshead side) has been called a land-pier, as its foundations rest upon rock.

The foundations of the four river-piers have been obtained by piling. A caisson was formed of two rows of sheet-piling, driven 4 feet apart, between which the sand was removed to a depth of 16 feet below low water, and the intervening space from that level to a few feet above high-water mark was filled with well-rammed clay. The gauge-piles of the inner row, 4 feet apart, were driven down into the freestone, the intermediate ones, together with the whole of the piles of the outer row, only going from 5 to 6 feet into the clay. The internal dimensions of the caissons are 76 feet 6 inches by 29 feet, with the four corners cut off in triangles, 10 feet by 10 feet.

The sand inside the caisson was then removed to a depth of 11 feet 6 inches below low water, and strong piles of Memel or of American rock elm were driven down into the stone; 121 piles, standing 4 feet apart, in rows 4 feet asunder, being thus driven in the interior of each caisson.

The heads of the piles were next cut off 7 feet 6 inches below low water, and each transverse row was connected by a sill of Memel, 12 feet by 12 feet, mortised and bolted to the head of every pile. The whole space to the top of the sills, being a depth of 5 feet, was then filled up with concrete, formed of

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 ———
 York, Newcastle,
 and Berwick
 Railway.

Roman cement, and above this, and spiked to the sills, were laid two courses of 3-inch planking, laid diagonally, and the courses crossing one another at right angles. Above the planking was laid a course of ashlar, 2 feet 3 inches in depth, in Roman cement, covering the whole of the interior of the caisson; and a series of ashlar courses of the same depth, but diminishing in steps of 1 foot on each side, carry up the footings to the basement of the pier.

The inner row of the piles which form these caissons is, I understand, to remain to protect the foundations from the washing of the current; the outer row is to be cut off at the level of the present bed of the river, all below that level being allowed to remain; and the interval between the two rows being covered with boarding or with flagging, to prevent the clay being washed away.

The narrowing the channel by the operations here described has been attended with the effect of deepening the bed of the river in many places; whereas formerly the depth of water at low tide nowhere exceeded 3 feet, it is now as much as 10 feet between some of the piers. The tide rises 11 feet 6 inches.

In driving the piles for these foundations a singular circumstance was observed. The instrument used to drive them was one of Nasmyth's steam-hammers, which gave 60 blows to the minute, the ram weighing 30 cwt., with a fall of 4 feet. The Memel piles were driven without difficulty, but those of American rock elm caught fire at the head, about 1½ inch from the top, and were charred to a depth of 2 to 3 inches, and one of them, I am told, broke out into flames after half an hour's driving.

The five centre piers consist each of two square hollow shafts or columns, connected at top by a semi-circular arch, and at bottom by a common basement and plinth, the whole formed of what may be called outer casings or tubes of ashlar, enclosing voids, of which two, measuring 7 feet by 4 feet 8 inches, are carried up perpendicularly from the footings, through basement, plinth, and shafts, nearly to the top of the pier, while a third, measuring 11 feet by 4 feet 8 inches, is carried up from the footings to the top of the plinth, directly under the vacant space which separates the shafts above.

The basements rise to 2' 6" above high-water mark. Each basement measures 76' 6" in length by 19' 6" in width, of which the centre portion beneath the plinth, measuring 48' 4" by 19' 6", is formed of block ashlar, enclosing the voids above described; the ends which go no higher than the basement are simply shells of ashlar, curved round to a point to divide the current, they measure 2' 6" in thickness increased to 4' at the point, and enclose a void 14' 6" by 9' 6". The whole of the voids in the basement are filled up with rubble masonry in Lyme Regis mortar, chiefly with a view of preventing any lodgement of water within the piers.

From the basements the plinths rise 18' 3", as square masses of block ashlar, 45' 10" by 16' 6", enclosing the same voids as the centre mass of the masonry below. Those voids also are filled with rubble masonry to the height of 6 feet from high water; above that, however, they are left vacant, as they are then beyond the reach of the tide.

From the plinth each pier is formed of two square shafts or columns of ashlar 17' by 14', enclosing the end voids 7' by 4' 8" and separated from one another by a space of 11' 10", corresponding to the centre void below. The shafts are 48 feet in height, but at two points in that height a couple of courses of ashlar have been carried through the whole thickness of each shaft, filling up the voids at those points, and binding together the ashlar sides.

At top, 80' 3" from low water, the shafts are again connected into one pier by a semicircular arch of ashlar, and thence to the top of the pier, 94' 4½" from low water, the whole is built as a solid mass; the voids in the shafts being made to disappear by causing the courses of ashlar to encroach upon them in successive steps till at length the courses meet.

This completes the masonry of the High Level Bridge. The land arches, with their piers, &c., contain 395,657 cubic feet of ashlar and 5,969 cubic yards of rubble masonry: the five centre piers contain 317,505 cubic feet of ashlar and 964½ cubic yards of rubble.

The estimated cost of these works was as follows:—

	£.	s.	d.
Cost of piling, planking, damming, and preparing sites for four river piers	25,954	17	4
Cost of clearing sites for remaining works, and removing materials	500	0	0
Cost of five middle piers	30,524	17	8
Cost of land arches	30,780	3	5
Cost of piling, and concrete for ditto	2,714	7	6
	£90,474	5	11
Contingencies	3,525	14	1
Total estimated cost	£94,000	0	0

This estimate has been exceeded, chiefly in consequence of the difficulties experienced in forming the foundations of the river piers, and of its having been found necessary to add largely to the quantities of ashlar and rubble masonry in those foundations and in those of the land portions of the work. The sums paid to the contractor who executed the whole of the masonry, amount to 127,000*l.*; from which, if we deduct 9,380*l.*, the cost to the Company of a temporary viaduct which the contractor erected for them while the permanent works were in progress, we have left 117,620*l.* as the actual cost of the masonry of the High Level Bridge.

The rails, together with the lower carriage-way and footpaths, are borne over each of the wider openings by strong bowstring girders formed of curved ribs of cast-iron strung by wrought-iron chains. The girders are connected together in pairs, of which one pair comes directly over each of the shafts into which the pier is divided lower down. Each pair encloses a footpath 6' 4" in width, formed at the level of the horizontal chains, while the carriage-way, formed at the same level, occupies the centre space measuring 20' 4" in clear width. If to these dimensions we add 4' 8", the width of the four girders and their columns, we have 37' 8" for the whole width of the iron-work of the bridge.

The ribs have been cast in five pieces; the rise is 17' 6", the depth increases from 3' 6" at the crown to 3' 9" at the haunches, each having an upper and a lower flange 12" wide. The thickness of metal of the two inner ribs is 3", that of the outer two only 2". The heels are cast into square hollow boxes to receive the ends of the tie-chains, and the lower surface of these boxes have projecting fillets of hardened steel sliding upon corresponding fillets on the fixed bearing plates to diminish the friction surface. The boxes of the inner ribs are 2' 4½" in width, having four fillets 4" wide; those of the outer ribs are 1' 9" in width having three fillets 3" wide.

The tie chains are formed of wrought-iron bars 7" by 1", of which there are 8 to each of the chains of the inner ribs, while those of the outer ribs have only 4. The ends are inserted into the hollow

boxes above described, and connected with the cast-iron rib by double sets of wrought-iron keys passing through the sides of the boxes and through the bars within, and to allow of this the ends of the bars are increased in size to 8" by 1½". The chains are kept to a horizontal line by being suspended at five points in their length from the longitudinal bearers of the lower road.

Upon each of the ribs, and cast with them, are 12 square vertical hollow shafts 14" by 14", the centre of each shaft coinciding with the centre of the ribs, and being cast hollow to allow a passage through the direct line of the rib to the wrought-iron rods which support the lower road. From these shafts rise square columns of cast-iron, of the same dimensions as the shafts themselves, connected at top by cast-iron longitudinal trough girders 12" wide by 14½" deep; the thickness of metal being 1½" at bottom and ¾" at the sides. These longitudinal girders are cast with square boxes 16" by 16" to fit on to the heads of the columns, and directly over each transverse row of four columns comes a transverse trough girder also of cast-iron, fitting on to the top of the longitudinal girder so as to connect together the four systems of columns, while at the same time it supports the longitudinal timbers of the upper platform. The transverse girders are 15" wide and 21" deep at the centre, diminishing to 18" at the ends; the thickness of metal is 2" at bottom and 1½" at the sides; on the sides are cast six square shoulders or boxes projecting 6" to receive the ends of the six longitudinal timbers, one of which comes directly under each rail of the triple line above. The platform is formed of a double flooring of 3" plank, laid diagonally; and upon this rest the longitudinal sleepers 12" by 6" of the triple line of rails.

The carriage-way and footpaths are suspended from the square caps of the longitudinal trough girders of the upper platform by strong wrought-iron rods descending through the hollow columns, and the columns themselves are continued down from the ribs to the level of the upper surface of the bow-string chains, partly to give a uniform appearance to the structure, partly to afford additional stiffness to the lower road. These descending portions of the columns are supported by the wrought-iron rods which pass through and are firmly secured to their bottom plates. The columns again have projecting shoulders at their lower extremity, upon which rest cast-iron longitudinal girders of the ordinary form 18" deep with a lower flange 14" by 1½". These connect together the feet of the columns; the ends of the girders being keyed into square boxes which rise from the projecting shoulders upon which they rest. The columns are 9' 11" apart from centre to centre, and deducting from this the width of the column, 14", we have 8' 9" as the clear span of the longitudinal girders of the lower road.

The carriage-way is borne upon transverse timbers 12" by 14" in the middle and 12" by 12" at the ends, where they fit into square shoulders or boxes cast upon the longitudinal girders. Three timbers, 3' 4" from centre to centre, come between each pair of pillar columns. Above them is laid a double flooring of 3" plank, laid diagonally, and above this comes the wood-paving of the road. The footpaths are borne by timbers 12" by 6", with packing pieces 6" by 6", to give additional height. Three also are placed 3' 4" apart from centre to centre, and above them is laid a double flooring of 2" plank. The whole of the timbers of the carriage-way and footpaths rest upon the lower flanges of the longitudinal girders, and are secured to them by wrought-iron straps. The girders and columns have no other transverse connexion at the lower level.

Above the footpaths the two girders forming each side pair are firmly connected together by a strong system of horizontal and vertical diagonal bracing frames of cast-iron secured by wrought-iron bolts, of which one between each pair of pillars passes through a hollow shaft in the horizontal framing, and clasps together the outer and the inner rib. This diagonal bracing, however, is discontinued near the haunches to allow a sufficient headway to the footpaths. It is then replaced by a centre flange cast upon the ribs of the same width as the flanges at top and bottom, and 2" thick.

The four girders and framing of each of the 125 feet openings contain 517 tons of cast and 50 tons of wrought-iron.

The estimated cost for spanning the whole of the six openings was 112,000*l.*, the actual cost was 113,000*l.*

The sectional area of the cast-iron in the four ribs is 644 square inches; that of the four wrought-iron chains is 168 square inches.

The permanent load upon each span, arising from the weight of the structure itself, is 700 tons.

This will cause the cast-iron ribs to be compressed with a force equal to 1.062 tons to the square inch, and the wrought-iron chains to be subjected to a tensile strain equal to 3.72 tons to the square inch.

For the variable load, let us suppose that a train composed of three coupled engines, weighing with their tenders altogether 100 tons, comes over each of the three lines of rails, and that at the same time the lower road and footpaths have a load made up of carriages and foot-passengers amounting to 120 lbs. to the square foot, or 220 tons.

Then the total load upon the structure will be:—

	Tons
Permanent load	700
Three trains	300
Carriages and passengers on lower road	220
Total	1,220

This load would cause the cast-iron ribs to be compressed with a force equal to 1.83 tons to the square inch, and the wrought-iron chains to be subjected to a tensile strain equal to 6.48 tons to the square inch.

The load upon the piles which support the piers is very great; for the loose sand through which they are driven can scarcely be depended upon to support any portion of it. Each of the piers with its foundations and footings contain 64,000 cubic feet of ashlar, 964 cubic yards of rubble masonry, and 216 cubic yards of concrete in Roman cement. The whole weight may be assumed to be 5,300 tons, and if to this we add 700 tons, the permanent load on one span; and 71 tons, the weight of that part of the roadway which comes directly over the pier, we have 6,071 tons as the permanent load to be borne by 121 piles, or 51½ tons to each pile. I am informed that a weight of 103 tons was placed upon the head of one pile and allowed to remain for four days, and that at the end of that time no settlement whatever had taken place.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

APPENDIX No. 51.

Appendix No. 51.

Manchester,
Sheffield, and
Lincolnshire
Railway.
(North Levertton to
Saxelby.)

MANCHESTER, SHEFFIELD, AND LINCOLNSHIRE RAILWAY—(North
Levertton to Saxelby).

SIR,

December 24, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that in compliance with their appointment, I inspected on the 21st instant the line of the Manchester, Sheffield, and Lincolnshire Railway, extending from a junction with the main line of that railway at North Levertton to the point of junction with the branch of the Great Northern Railway extending from Lincoln to Gainsborough, at Saxelby, being a distance of 8 miles 16 chains. The engineering works are generally light, the only one of any magnitude being a viaduct by which the railway is carried across the River Trent: this is near 400 yards in length, and consists of a number of timber-bays with wooden piles for supports, and two openings of 130 feet each, spanned by wrought-iron tubular girders resting on masonry piers. The roadway over these openings is carried upon wrought-iron cross bearers rivetted to two outside principal girders, which form the parapets of the bridge, and are thus made to carry both lines of way. I tested these girders by bringing on one opening four engines in steam with their tenders (two to each line), together amounting to about 80 tons, and found the deflections of each beam to be nearly $1\frac{1}{4}$ inch. The beams or tubes themselves appear to have sufficient strength to support the weights that may come upon them in practice, but are not built in a very accurate line, nor very regular in form, and being painted, I was not able to examine closely the rivetting; but I nevertheless remarked several rivets that appeared not to be very perfect; the deflection also is more than might, I think, have been anticipated from the effect of the load, and considering the very light construction of this bridge, the superstructure over each span being only about 180 tons, whereas the load that may come upon it in the event of two trains passing each other on one bay bears a large proportion to this the permanent load or weight of the bridge, and considering also the amount of deflection under the test applied, I do not feel sufficient confidence in the construction to recommend the Commissioners to authorize the opening of this line for the conveyance of the public unless some means be contrived for stiffening this bridge. In wrought-iron tubular girders, great care appears to be necessary in the arrangement of the details of construction, and a departure from proportions fixed carefully by experiment should require a fresh series of experiments to arrive accurately at a knowledge of the strength of the construction, and considering the great number of parts of which a tube is formed, and the strains to which it is subject, with the probable reduction of strength, although slight, by time, I cannot do otherwise than report that, according to the knowledge as yet obtained of this subject, I do not consider that this bridge can be submitted to the continuous passage of trains for an unlimited number of times with safety, and therefore I have to report, that the opening of this railway for the conveyance of the public will, in my opinion, be attended with danger to the public using the same, by reason of the insufficiency of the works.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
December 27, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Captain Simmons' report of his inspection of the Manchester, Sheffield, and Lincolnshire Railway, from North Levertton to Saxelby, and to inform you that, for the reasons therein stated, they have postponed the opening of the line in question for the purposes of public traffic for one month from this date.

I have, &c.,

The Secretary of the
Manchester, Sheffield, and Lincolnshire Railway Company.

H. D. HARNESSE,
Capt. Royal Engineers.

SIR,

Whitehall, January 5, 1850.

I HAVE to report to you, for the information of the Commissioners of Railways, with reference to my report of the 24th ultimo upon the branch of the Manchester, Sheffield, and Lincolnshire Railway extending from Levertton to Saxelby, that the engineer of the line has informed me that an error occurs in that report as to the amount of the test to which the bridge was subjected in my presence. The weight of the four engines is stated to be 148 instead of 80 tons, as taken erroneously by me. Having therefore carefully reconsidered the subject, which is materially affected by this error, with the calculations and deductions to be drawn from them and from the experiment (as corrected by the engineer), I have to report that the conclusions at which I before arrived still remain unshaken, and that I cannot report that the opening of the railway for the conveyance of the public will be unattended with danger to the public using the same.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

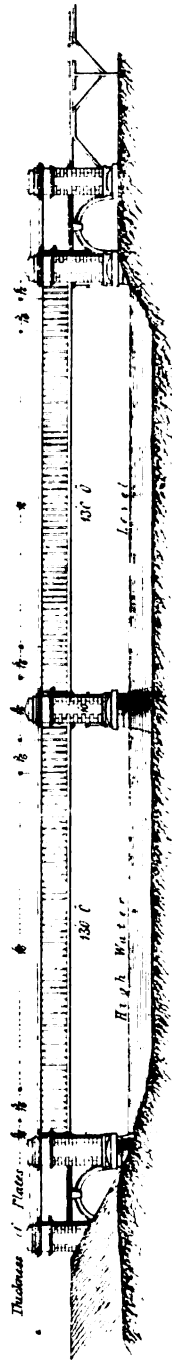
to face p. 86.

Plate 1.

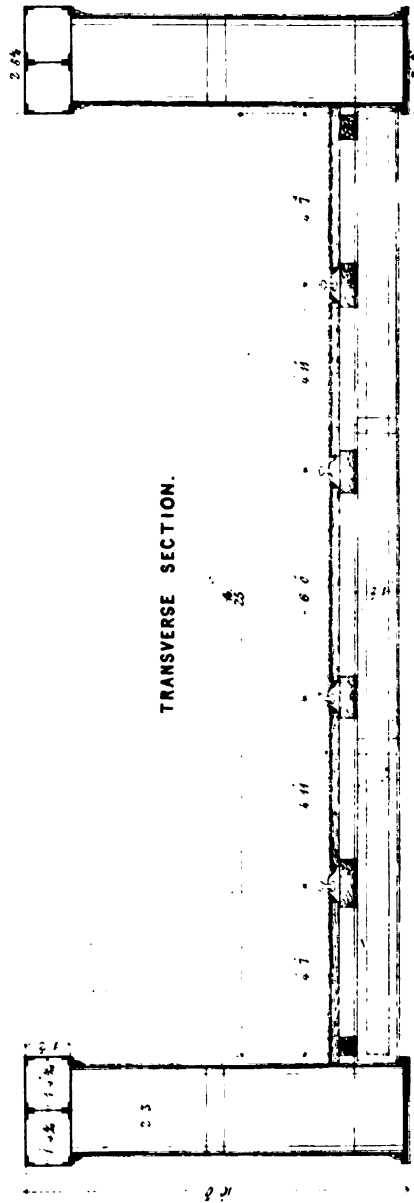
MANCHESTER, SHEFFIELD AND LINCOLNSHIRE RAILWAY.

TORKSEY BRIDGE OVER THE RIVER TRENT.

GENERAL ELEVATION.



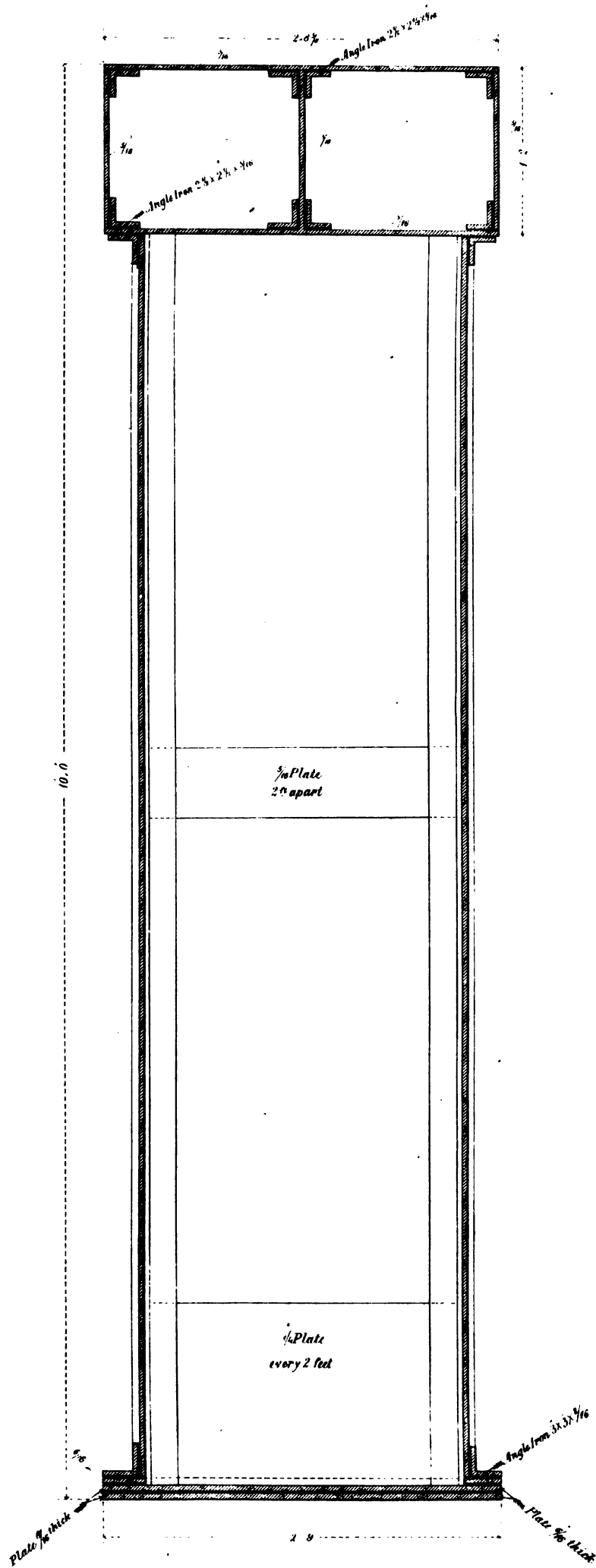
TRANSVERSE SECTION.



TORKSEY BRIDGE.
SECTION OVER CENTRE PIER.

to face P. 86.

Plate 2.

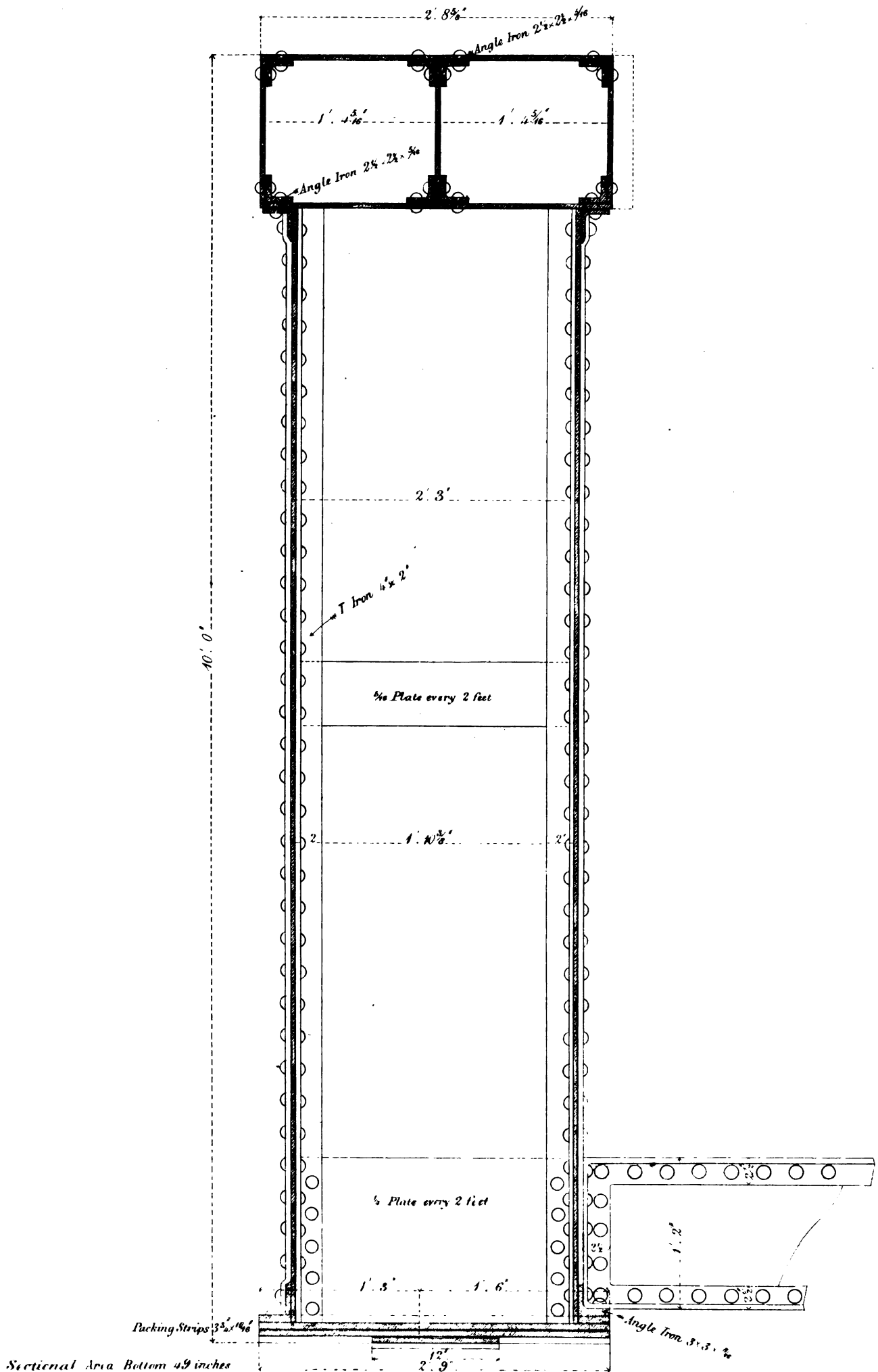


TORKSEY BRIDGE

TRANSVERSE SECTION AT CENTRE OF SPAN.

to face P. 86.

Plate 3.



Scale 1 Inch to a Foot.

Stancliffe & Co. Civil Engineers, Leeds.

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Plate 4.

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Counter Sunk Rivets at Bearings

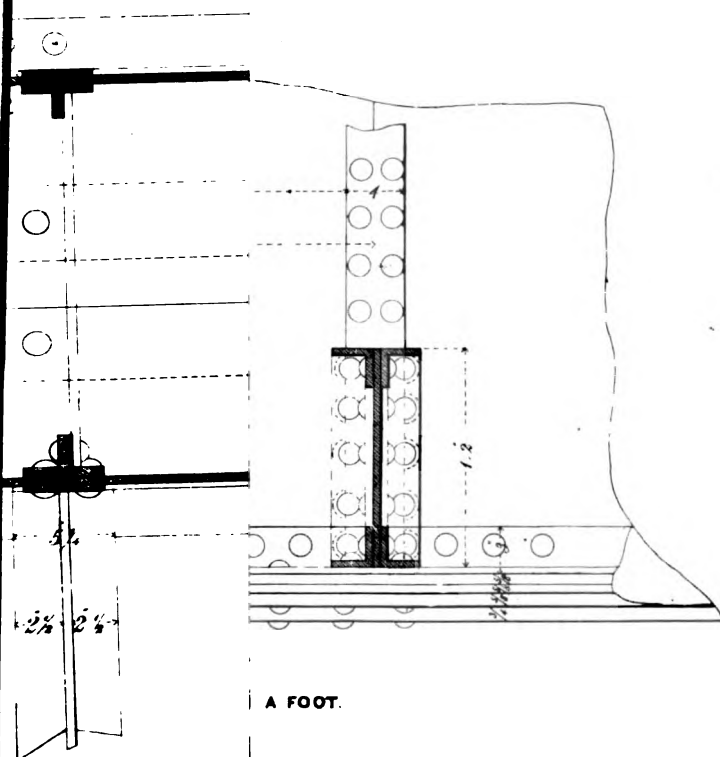
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Counter Sunk Rivets at Bearings

SELF PLAN C

S BEARERS.



A FOOT.

1. P. 140.
Standidge & Co Litho Old Jersey

SIR,

Whitehall, January 21, 1850.

Appendix No. 51.

Manchester,
Sheffield, and
Lincolnshire
Railway.
(North Leverton to
Saxelby.)

I HAVE to report to you, for the information of the Commissioners of Railways, that on the 11th instant I again inspected the bridge over the River Trent at Torksey, on the branch of the Manchester, Sheffield, and Lincolnshire Railway, connecting that railway at North Leverton with the Great Northern at Saxelby, concerning which I had reported on the 27th ultimo, that I did not consider it of sufficient strength to support the repeated strains to which it will be subjected by the continuous passage of trains in the course of the ordinary railway traffic which will occur after the line shall have been opened for the conveyance of the public.

On the 11th instant the tests applied were as follows:—

1st. Three engines, the weights of which were given to me by the locomotive Superintendent, as together amounting to 108·075 tons, when fully loaded, were placed upon the south road, and produced a deflection of the south beam of ·6 of an inch, and of the north beam of ·36 of an inch.

Three more engines, together weighing, with their loads, 114·6125 tons, were then placed upon the north road, which increased the deflection of the south beam to 1·20 inch, and of the north beam to 1·32 inch. These deflections were entirely due to the temporary load, and therefore in addition to the permanent deflection due to the constant load, and corresponded as closely as could be expected with the result which was to be anticipated from the calculations which I had made from the drawings and dimensions furnished to me by the engineer, which gave a deflection of 1·41 inch for an evenly distributed load over the whole bridge of 222·6875 tons, this being the stated weight of the six loaded engines.

As I consider this experiment to be a verification of my calculations, I have to report that I still remain of the same opinion that the bridge is not of sufficient strength to bear the repeated strains to which it may and will be submitted if the railway be opened for the conveyance of the public, considering the great amount of the load, and more especially the large proportion which the rolling or temporary bears to the fixed and permanent weight of the structure, and I have therefore to report that I am of opinion that the opening of this branch line of the Manchester, Sheffield, and Lincolnshire Railway, from Leverton to Saxelby, will be attended with danger to the public using the same, by reason of the insufficiency of the works.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
January 22, 1850.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of an additional Report from Captain Simmons, on the Manchester, Sheffield, and Lincolnshire Railway from North Leverton to Saxelby, and to inform you, that for the reasons therein stated, they have further postponed the opening of the line in question for the purposes of public traffic for one month from this date.

I have, &c.,

To the Secretary of the
Manchester, Sheffield, and Lincolnshire Railway.

H. D. HARNESSE,
Capt. Royal Engineers.

SIR,

2, Queen's-square Place, Westminster, January 25, 1850.

As Captain Simmons is of opinion that a deflection of 1·26 inch with 222 tons is too great, I shall be glad to be informed the amount of deflection which in his opinion would indicate a sufficient strength.

A paragraph in the Girder Commissioners' Report being now the foundation of the new requirements of the inspecting officers of the Railway Commissioners, and very great difference of opinion existing on the subject, it is very important all doubts on the question should be removed as soon as possible.

I understand Mr. Cubitt to say it was not intended to give any opinion whatever on wrought-iron, and the multiple of 6 for cast-iron was only that the ordinary passing load should not exceed one-sixth of the breaking weight.

I understand Captain Simmons to use the multiple of 6 as between the sum of the girders and roadway and the greatest passing load, and the breaking weight.

I understand you to think that three times the girders and roadway, and six times the greatest passing load, would be sufficient.

This question is so wide and important to the Railway Commissioners, the profession of which I am a member, and to the public, that I hope it may be promptly and carefully considered and settled.

Mr. Stephenson returned rather unexpectedly last night from Liverpool, and, if convenient, we will be prepared to wait upon you at three o'clock to-day.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

JOHN FOWLER.

Appendix No. 51.

Manchester,
Sheffield, and
Lincolnshire
Railway.
(North Leventon to
Saxelby.)

Office of Commissioners of Railways, Whitehall,
January 26, 1850.

MY LORD,

I HAVE been directed by the Commissioners of Railways to request your assistance in a difficulty which has arisen with respect to the interpretation of an important paragraph of the valuable report upon the application of iron to railway bridges recently made by the Commission of which your Lordship was the President.

The paragraph referred to will be found in the last or 18th page of the printed report, and is that which recommends that the greatest load in railway bridges should not exceed one-sixth of the breaking weight; the difficulty which has arisen will be understood from the enclosed copy of a letter from Mr. Fowler, in which it is stated that the President of the Institution of Civil Engineers, one of the members of the late Commission, considers the paragraph in question to be applicable only to bridges of cast-iron.

It appears to the Commissioners that so far as the effects of reiterated flexure are concerned, the paragraph in question alludes to cast-iron; but that the recommendation of a double proportion of strength in railway bridges to meet the effects of percussion, and the recommendations in the following paragraph with respect to the effects of velocity, should be understood to be generally applicable to railway bridges.

The Commissioners are, however, exceedingly desirous to know with certainty the interpretation which your Lordship and the other members of the Commission intended the paragraph to receive; and they have directed me to enclose herewith a copy of a letter which they caused to be addressed to the inspecting officers of this department for their guidance, until copies of the report could be supplied to them, and to say that they shall be greatly obliged by any assistance which your Lordship can render them on this subject before they reply to the inquiry with which Mr. Fowler's letter commences.

I have, &c.,

The Right Hon Lord Wrottesley.

H. D. HARNESSE,
Capt. Royal Engineers.

(ENCLOSURE.)

Office of Commissioners of Railways, Whitehall,
December 20, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you, as early as it can be procured, a copy of the report of the Commissioners appointed by Her Majesty to inquire into the conditions to be observed in the application of iron to railway structures, the information and the recommendations it contains having an important bearing on your duties as an inspector of railways. And, for your guidance in the mean time, to inform you that results recorded in that report and its appendices do not appear to be opposed to the opinion heretofore held by engineers, that an iron beam of good quality, in cases where the ultimate strength is the only question for consideration, may be subjected to a permanent load at rest equivalent to one-third of its central breaking weight; but that, considering the effects which moving loads may produce, it is recommended that "the greatest load in railway bridges should in no case exceed one-sixth of the weight which would break the beam when laid on at rest in the centre," and that from a paragraph which follows the above extract, it appears that there are cases in which it should not be considered sufficient for a bridge to be capable of bearing six times the greatest load to which it can be exposed in practice; and I am to direct your attention to the following considerations founded on the results recorded in the preliminary essay to Appendix (B) of the report, written by Professor Willis, one of the Commissioners for the Inquiry, and to which the paragraph in question has reference.

The effect produced upon a bridge by the velocity of the passing load is shown to be dependent upon the quotient obtained by dividing the square of the length of bearing by the product of the square of the velocity of the passing load into the deflection which that load would produce if at rest on the centre of the bridge; and that where the bearing being expressed in feet, the velocity in miles per hour, and the deflection in inches, this quotient is greater than 10, the effect of the velocity of the passing load will not require the strength of the bridge to be greater than is necessary to bear six times the greatest moving load to which it can be exposed, as well as three times its permanent load; but that when that quotient is about 2½, the bridge should be capable of bearing seven times the moving load; when unity, eight times, and that when the quotient is about one-half, nine times the moving load should be allowed in addition to three times the permanent load, in estimating the requisite strength of the bridge.

I am to request you to consider the bridges upon the different lines which have been inspected by you, with reference to these observations, and to state in an early report those bridges which do not appear to you to be as strong as the recommendations referred to require.

I am, &c.,

Capt. Simmons, R.E.
Capt. Wynne, R.E.
Capt. Laffan, R.E.

H. D. HARNESSE,
Capt. Royal Engineers.

SIR,

12, Lowndes-street, London, February 4, 1850.

Appendix No. 51.

I HAVE to acknowledge the receipt of your letter, dated the 26th January, 1850, stating that the Commissioners of Railways are desirous of learning my interpretation of two of the concluding paragraphs in the Report of the Commissioners for Inquiring into the application of Iron to Railway Structures. I delayed writing to you until I had communicated with my colleagues; having now, however, received their answers, I proceed to reply to your queries.

Manchester,
Sheffield, and
Lincolnshire
Railway.
(North Levenson to
Sazelby.)

It appears to me, that the following is the proper construction to be put upon the paragraphs you allude to:—

The first of those paragraphs recommends that the greatest load in railway bridges should not exceed one-sixth of the breaking weight. This recommendation has been derived from experiments on cast-iron, and has reference therefore solely to railway-girder bridges in which that material forms the support. The proportion of one-sixth of the breaking weight is derived from experiments on horizontal impact. From the nature of these experiments it is clear that when the results are applied to vertical deflections in beams; the deflection due to the weight of the beam must be added to that which is produced by the load. Now, the former is equivalent nearly to the deflection that would be produced by half the weight of the beam collected at the centre; consequently the breaking weight should be taken equal to three times the weight of the girders and roadway, added to six times the greatest passing load.

The recommendation in the succeeding paragraph, to which your letter also alludes, is applicable to all elastic horizontal bridges, whatever be the material; but it contains no reference to the proportion of the load to the breaking weight, and merely assigns a small addition to be made to the load in calculation, in order to compensate for the effects of velocity.

I have, &c.,

WROTTESELEY.

Capt. Harness, R.E.,
&c. &c.

MY DEAR SIR,

2, Queen-square Place, Westminster,
January 28, 1850.

I ENCLOSE you a letter I have received this morning from Mr. Fairbairn, whose opinions on this subject are certainly entitled to great respect.

You have now, I think, every authority of great practical value in favour of the sufficiency of the bridge, including the names of Brunel, Locke, Stephenson, Bidder, Gregory, Rennie, Fairbairn, &c., &c.

Under these circumstances, I would beg to suggest whether Captain Simmons may not be mistaken, and whether some other inspecting officer might not with propriety (as I understand has been done in other cases), be requested to report on the bridge.

I have, &c.,

JOHN FOWLER.

Capt. Harness, R.E.,
&c. &c.

MY DEAR SIR,

Manchester, January 26, 1850.

It must be a subject of regret, that any misunderstanding should exist between Captain Simmons and yourself, respecting the security of the Torksey Bridge over the River Trent. I apprehend, Captain Simmons must have inadvertently made some mistake in the formula used for computing the strength of tubular girders, as I find the girders in question, if properly executed, and of which I make no doubt a circumstance borne out by the deflexion of 1.26 due to a load of 2.22 tons, will support nearly 1,300 tons equally distributed over one span before they break. The breaking weight will therefore be in confirmation of your own calculation, $5\frac{1}{2}$ times greater than the heaviest load (195 tons) that you can place upon the bridge.

I have not had time to examine, with that care which the importance of the subject demands, the new theory elicited by the experiments made at Portsmouth, on impact, I am satisfied, whatever they may be, that they do *not apply to my system of tubular girders*, as experiments which I have in my own possession, on the force of impact, and on heavy weights passing over these bridges, appears to confirm the fact, that the deflection in the former is a result due to the height through which the body falls, and in the latter, the deflection is the same at all velocities, if it is not less in short spans, as the velocities are increased, as stated by some experimenters. Altogether, I think there can be no doubt as to the security of the Torksey Bridge, and I hope in the course of another meeting that Captain Simmons will see his way clearly to the public security by passing the bridge.

I have, &c.,

W. FAIRBAIRN.

John Fowler, Esq., C.E.

N

Appendix No. 51.

Manchester,
Sheffield, and
Lincolnshire
Railway.
(North Levenson to
Sawley.)

SIR,

Office of Commissioners of Railways, Whitehall,
January 30, 1850.

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 28th instant, and in reference thereto, to request you to call at this office when convenient; and I am at the same time to inform you that the Commissioners have not received the opinions of Messrs. Brunel, Locke, Stephenson, Bidder, Gregory, or Rennie, to which allusion is made in your letter.

I have, &c.,

J. Fowler, Esq.,
2, Queen-square Place, Westminster.

H. D. HARNESSE,
Capt. Royal Engineers.

EXTRACT of Minute of the Commissioners of Railways at Board of the
4th February, 1850.

REFER all the papers to Captain Simmons and request him to inspect such tubular bridges as may be most similar to the Torksey Viaduct, and after observing the effect of traffic upon them, to consider and report whether the Torksey Viaduct might be used with safety to the public; considering also whether, in the event of this viaduct proving too weak, indications would not be previously given, so as to obviate all risk of any sudden accident, and also to state if Captain Simmons still remains of opinion that the viaduct cannot be opened with safety, what further strengthening will in his opinion be necessary.

SIR,

February 20, 1850.

I HAVE to report to you, with reference to the Minute of the Commissioners forwarded with your letter of the 4th instant, and accompanying documents, that I have given the matter my most earnest consideration, and have communicated with Mr. Fairbairn, whose written opinion of the bridge was enclosed to the Commissioners for their consideration in Mr. Fowler's letter of the 28th January. I have not since examined any bridges of similar construction, but have taken steps to obtain the details of such as appear to me most probable to afford upon examination any information as to the effect of time and continuous use upon structures of this nature; but in the meanwhile, as the period has nearly elapsed to which the opening of the branch of the Manchester, Sheffield, and Lincolnshire Railway, upon which this bridge occurs, has been postponed, I now have to forward the following report on the points in their minute, which bear upon the bridge at Torksey over the River Trent, my objections to which have caused the postponement of the opening of the line for the conveyance of the public. I regret that this report cannot be deferred for a longer period, as Mr. Fairbairn, whose large experience and extensive knowledge on this subject are so well known, has kindly promised to reconsider the bridge, and let me have a revised opinion upon it.

The examination of the similar structures that have been in operation does not appear to me of such great importance at the present time, as the invention is novel, and the first bridge of the nature constructed for the passage over it of railway trains was only sanctioned by the Commissioners to be used for the conveyance of the public in August, 1847, having been erected by Mr. Fairbairn on the Blackburn, Bolton, Clitheroe, and West Yorkshire Railway, and therefore being, as I believe, a much stronger bridge than this at Torksey, it cannot be expected to show any effects due to the continuous and repeated strains which have since been brought upon it.

As to "whether in the event of the viaduct proving too weak, indications would not be previously given so as to obviate all risk of any sudden accident," I have to state for the information of the Commissioners, that I have not sufficient experience on the subject to answer their question; but I would remark, that the observation of a failure in practice is altogether different from that of one purposely caused for the sake of experiment: in the latter case, the experimenters anxiously and narrowly watch the results; whereas in practice, bridges and other structures are left to the examination (except occasionally) by a class of foremen and plate-layers, who apply no accurate tests or measurements, but merely look at the bridge, or casually watch a train pass over it. I do not mean from this to infer, that in case of failure no notice would be given so as to prevent danger, but merely that doubts arise as to the amount and nature of the notice attracting the attention of those intrusted with the care of the railway.

In reply to the question whether "if I still remain of opinion that this viaduct cannot be opened with safety to the public, what further strengthening will be necessary?" I have to state, that for reasons before adduced, I do not consider that the viaduct can be opened for the continuous passage of trains with safety to the public, and that it will not be in a condition to be opened until it shall have been so strengthened that a load of about 400 tons (including the weight of the beams themselves, and all the standing parts of the bridge) distributed equally over the platform of one span, shall not produce a greater

pressure upon the top plate of the girders than five tons per square inch. In stating this I have taken what I conceive should be the utmost limit of strain to which the bridge should be subjected by the given load, considering its nature, nearly 200 tons being made up of railway trains in motion, and the doubtful workmanship in the structure.

In arriving at this conclusion I express my opinion with all diffidence, as there is no decided authority upon the subject, and the peculiar circumstances of construction of most bridges vary considerably, preventing the application of an universal law.

Mr. Hodgkinson, whose authority in these matters is entitled to great deference, states, that he conceives that eight tons per square inch is the greatest compressible strain to which a tube of this sort should be subjected; and again, in speaking of the Conway Bridge, he states, that a tube of given dimensions, "if made without joints, and loaded without vibration, would bear a weight in the middle of 1,627 tons (equal to 12 tons per square inch pressure on the top) without entirely destroying the utility of the material; but plates united by rivetting in the best manner in common use, are weaker than plates without joints in the ratio of 3 to 2 nearly, we ought therefore to reduce the computed weight in that ratio, or even greater, since the computation is made on the supposition of the tube being without joints and loaded without vibration."

And again, in commenting on an experiment made upon a large tube 47 feet long, and about 6½ tons weight, built up of plates ½ inch thick, being thicker in fact than the chief part of the plates in the Torksey Bridge, he states, that "long-continued impact producing a deflection of less than one-fifth of what would be required to injure the tube by pressure, was completely destructive to the rivetting."

The great weight of the Menai and Conway bridges in proportion to their load producing vibration (about 1 to 4·5 in the Conway) will obviate this danger; but it appears a question to what extent allowance should be made for this effect when the proportions of the variable and permanent load are altered, and, as in the present case, become nearly equal to one another. The deflection due to the rolling load, stated to be 222 tons, which I saw upon the bridge, very considerably exceeds one-fifth of the ultimate deflection which the tube may be expected to bear, and it is to be remembered that this deflection is in addition to the constant effect of the permanent load.

Mr. Fairbairn, in his letter forwarded by Mr. Fowler, states, that experiments which he has in his own possession on the force of impact upon his tubular bridges, and on heavy weights passing over these bridges, appear to confirm the fact that the deflection in the former is a result due to the height through which the body falls, and in the latter the deflection is the same at all velocities. In this I agree to a great extent with Mr. Fairbairn, that the increase due to the velocity is not, practically speaking, in most cases appreciable, and I believe in the present instance it would scarcely be at all so; but nevertheless, I cannot go so far as to attach no value to the experiment on impact by Mr. Hodgkinson before given, the effect of which is again aggravated by the concussions caused by the irregularity of motion of the moving weight. I would further remark, that in this question much must depend upon the nature of the rivetting; where machines are used for that purpose, a better result may be expected than when it is done by hand; and again, the weight of hammer used, or force of blow in forming the rivet-heads, will make a material difference. In the Torksey Bridge, from having seen several split rivet-heads, I have no great confidence in the workmanship.

I shall forbear at present to make any remarks upon Mr. Fairbairn's calculation as to the strength of this bridge, as I expect to receive a communication from him upon the subject, in which he will, I believe, somewhat alter those calculations.

In conclusion, I have to report, that I have again this day inspected the bridge in question, having informed the Secretary of the Company of my intention to do so, and that no addition has been made to its strength since my last inspection. I again examined as far as I was able, which was very imperfectly in consequence of the absence of any of the officers of the Company, or any preparation for the inspection, the tubes with reference to their workmanship, and find that I am fully borne out in the expression of a want of confidence therein, as the rivetting is certainly very imperfect, and the joints are not accurately, or as I conceive, very judiciously made; and the top of the girders are considerably out of line, both horizontally and vertically, and I have therefore to report that in my opinion the opening of the line from North Leverton to Saxelby will be attended with danger to the public using the same by reason of the insufficiency of the works.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
February 21, 1850.

Sir,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of a report by Captain Simmons on the Torksey Viaduct, and to inform you that for the reasons therein stated the Commissioners have postponed the opening of the portion of railway between North Leverton and Saxelby for a further period of one month from this date.

I have, &c.,

To the Secretary of the
Manchester, Sheffield, and Lincolnshire Railway Company.

H. D. HARNESSE,
Capt. Royal Engineers.

Appendix No. 51. SIR,

Secretary's Office, Manchester, February 22, 1850.

Manchester,
Sheffield, and
Lincolnshire
Railway.
(North Leverton to
Saxelby.)

I HAVE the honour to acknowledge the receipt of your letter of the 21st instant, enclosing another report by Captain Simmons on the Torksey Viaduct, and postponing the opening of the railway between Leverton and Saxelby for one month from that date.

I beg leave respectfully to call the attention of the Railway Commissioners to that paragraph in Captain Simmons's report which refers to "the absence of any officers of the Company on this occasion," and to say that the same was very much regretted by the Directors as well as all concerned, but was solely occasioned by the total want of sufficient notice on Captain Simmons' part, his letter having only been received by me the day before that on which he had fixed to make the inspection. As Mr. Fowler lives in London, I *could* only let him know by a *telegraphic message* that the inspection was to take place, and the locomotive superintendent was warned to have an engine ready; but it might have happened, if the latter had not fortunately been in the way, that no engine could have been sent; and had Mr. Fowler by any accident been from home, even he could not have known of it.

I would beg the favour in future of at least seven days' notice being given, in order that such of the Directors as wished to see the bridge itself under proof might be present.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. H. HUMFREY, Secretary.

*Office of Commissioners of Railways, Whitehall,
March 16, 1850.*

SIR,

I HAVE the honour to report to you, for the information of the Commissioners, that I yesterday inspected a portion of the Manchester, Sheffield, and Lincolnshire Railway, extending from Saxelby to North Leverton.

The Torksey Bridge, which bears the rails of this line over the River Trent at Torksey, is still in precisely the same condition that it was when inspected by Captain Simmons on the 20th ult., no steps having been taken to strengthen the wrought-iron girders. Captain Simmons, in his report dated the 20th ult., has stated his opinion that the wrought-iron girders of this bridge are not sufficiently strong to insure the safety of public traffic; and after a careful inspection of the structure, I entirely concur with him in that opinion; I have, therefore, to report that, in my opinion, the opening of the line between Saxelby and North Leverton would be attended with danger to the public, by reason of the insufficiency of the works.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

*Office of Commissioners of Railways, Whitehall,
March 18, 1850.*

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Captain Laffan's report of his inspection of the portion of the Manchester, Sheffield, and Lincolnshire Railway between Saxelby and North Leverton, and to inform you that for the reasons therein stated they have postponed the opening of the line in question for the purposes of public traffic for a further period of one month.

I have, &c.,

To the Secretary of the

Manchester, Sheffield, and Lincolnshire Railway Company.

H. D. HARNESS,

Capt. Royal Engineers.

*2, Queen-square Place, Westminster,
March 20, 1850.*

DEAR SIR,

I HAVE this morning received from the Secretary of the Manchester, Sheffield, and Lincolnshire Railway, a copy of your letter, written by direction of the Commissioners of Railways, to postpone again for one month the opening of the Leverton branch of the Manchester, Sheffield, and Lincolnshire Railway, by reason of the insufficiency of the Torksey Bridge, with the report by Captain Laffan, the inspecting officer, in which the Commissioners forward their decision.

I have already complained of the want of reasonable notice which for the second time prevented my own attendance, or proper arrangements being made by the Company for the reception and convenience of the inspecting officer.

The report of Captain Laffan being really but a confirmation of Captain Simmons' former reports, without any fresh reasons being assigned, and made after a cursory inspection, without any trial, I shall consider as having no value beyond that of having ascertained that no alteration has been made.

I shall, therefore, in this communication feel compelled to refer alone to the report of Captain Simmons of February 20th.

It is there stated as the ground on which this bridge is pronounced insufficient, that it does not comply with certain conditions, and will not do so "until it shall have been so strengthened that a load of about 400 tons (including the weight of the beams themselves, and all the standing parts of the bridge), distributed equally over the platform of one span, shall not produce a greater pressure upon the top plates of the girders than 5 tons per square inch. In stating this, I have taken what I conceive should be the utmost limit of strain to which the bridge should be subjected by the given load, considering its nature, nearly 200 tons being made up of railway trains in motion, and the doubtful workmanship in the structure."

Now, although I protest most strongly against the conclusion come to by Captain Simmons that 5 tons per square inch is the greatest strain to which the metal in this bridge may be safely subjected, even when tested as required, by an enormous load which in practice can never be even approached, inasmuch as Mr. Hodgkinson's experiments decide the question that 8 tons is a perfectly safe compressive strain.

I also protest against the objection to the workmanship, which although not of the finest and most finished class, is nevertheless perfectly sound, and, for all practical purposes, as good as possible.

The slight deflection of 1.26 inch with the strain of six locomotive engines weighing 222 tons, as witnessed by Captain Simmons, appears to be conclusive against any charge of imperfect workmanship.

I consider, therefore, Captain Simmons is without the justification of any sufficient reason, or indeed any reason at all, for fixing upon 5 tons as the greatest strain to which the bridge can be safely subjected, when no authority on the subject has even suggested less than 8 tons.

Assuming, however, that Captain Simmons is justified in his extraordinary requirements for this bridge, I contend it does now, without any alteration whatever, comply with them.

Some reference being made to Mr. Fairbairn, and the opinion he expressed in a letter to me, which was forwarded for the use of the Commissioners, wherein he expressed his conviction of the sufficiency of the bridge, and also to the modification of that view as expected by Captain Simmons to be contained in another paper, I may here allude to it, as Mr. Fairbairn was polite enough to send me a copy of that communication.

Mr. Fairbairn gives a table with fixed proportions as his own individual recommendation, which however is greatly in excess of this practice, and certainly in excess of the Torksey Bridge.

These proportions, however, are stated to be adapted for simple girders of one span.

Mr. Fairbairn arrives at the conclusion that although the Torksey Bridge does not come up to his standard, the dimensions "*are nevertheless sufficient to render the bridge perfectly secure.*"

This conclusion is arrived at by treating the Torksey Bridge as two separate and distinct bridges; but if Mr. Fairbairn had taken the trouble to ascertain the value of the continuity over the centre pier, he would have found an addition to the strength of nearly 50 per cent., and that it was fully equal even to the requirements of his own empirical standard.

I can only account for Captain Simmons' opinion that the Torksey Bridge is insufficient, by supposing that he, as well as Mr. Fairbairn, omits the consideration of the value due to the continuity of the beam.

I have ascertained by experiment and calculation that the effect of this continuity is an addition to the strength of the bridge in the proportion of 9 to 14, and a reduction of the compressive strain upon the top plates to 4.60 tons per square inch.

Under these circumstances I feel it impossible to recommend the Railway Company to make any addition whatever to the strength of the Torksey Bridge.

I have, &c.,

JOHN FOWLER.

Capt. Harness, R.E.,
&c. &c.

SIR,

Whitehall, April 6, 1850.

I HAVE to report, that upon receiving your minute referring to me a letter from Mr. Fowler, the engineer of the Manchester, Sheffield, and Lincolnshire Railway, relative to the postponement of the opening of the branch of that line, between North Leverton and Saxelby, in consequence of an objection taken by me to the bridge over the River Trent at Torksey, I proceeded to reconsider the subject, and have again inspected the bridge, making a series of careful experiments upon it; in which Mr. Fowler and the Company offered every facility.

Mr. Fowler, in the remarks which he has made upon my report of the 20th of February, seems to think that I have been unreasonable in stating that the bridge "should in my opinion be so strengthened that a load of about 400 tons (including the weight of the beams themselves and all the standing parts of the bridge) distributed equally over the platform of one span, shall not produce a greater pressure upon the top plates of the girders than five tons per square inch."

First, as regards the load of 400 tons, which is styled an "enormous load, such as in practice can never be even approached." By a statement since obtained from Mr. Fowler,

Appendix No. 51.

Manchester,
Sheffield, and
Lincolnshire
Railway.
(North Leverton to
Saxelby.)

Appendix No. 51. the following is the permanent load carried by the two beams supporting the railway over one opening:—

Manchester,
Sheffield, and
Lincolnshire
Railway.
(North Levenson to
Saxelby.)

	Tons.	Cwts.
Weight of main girders	91	12
Cross girders	27	1
Timber	18	5
Rails, chairs, and fastenings	7	18
Ballast (2 inches thick)	19	10
	<hr/>	<hr/>
	164	6

If the ballast were increased to a depth of 6 inches, the load would become 203 tons 6 cwt. When I first inspected the bridge the actual ballast upon it was, I believe, not less than 4 inches, and there is now sufficient depth between the top of the rails and the flooring to allow of its accumulating or being increased to 6 inches.

As regards rolling load, the actual weight of six engines placed upon it in a former test was 222 tons, which I readily grant to be an excessive and rare though not an impracticable load; this was placed upon the bridge by Mr. Fowler, in my presence, but not at my request; a load, however, such as may be produced by two heavy mineral trains meeting upon the bridge may frequently amount to 190 tons, making altogether, according to Mr. Fowler's calculation of weight, 359 tons 6 cwt., or with 6 inches of ballast, 398 tons 6 cwt., amounting very nearly to the 400 taken by me as a maximum load.

In ascertaining the powers of a structure to support the strains and pressures brought upon it in the course of railway traffic, I do not consider that a load less than may possibly be brought upon it in practice should be taken, but that the greatest practicable load, which I endeavoured to ascertain, and I believe to have correctly stated in the present instance at 400 tons, should be the weight considered in calculating the powers of the structure.

Secondly, Mr. Fowler "protests most strongly against the conclusion, that five tons per square inch is the greatest strain to which the metal of the bridge may be subjected." In making this proviso, I stated very fully my reasons, and I believe that I am borne out by the practice of the most eminent engineers in the country in this opinion. The application of wrought-iron in plates to structures of this nature is of very late introduction, and therefore I approached the subject with much diffidence, and there being no very great experience on the subject, and no work of the nature having stood the test of time and continuous strains, I could only adopt the opinions of those engineers who have erected the principal works of this nature as evidenced by those works, and I still believe that, in taking the greatest admissible strain at five tons, I correctly enunciated their practice.

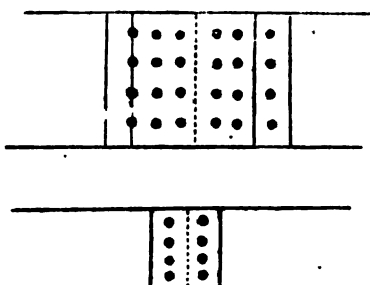
In the Britannia Bridge over the Menai Strait, the compression on the top and the extension on the bottom in no place amount to that strain. In a large bridge on the Windsor branch of the Great Western Railway, the greatest amount of strain does not come up in either case to five tons; at the Conway the strain slightly exceeds that amount. These being the principal and largest works in which wrought-iron is submitted to a compressive force, and erected by the most eminent engineers, I consider that I was not unreasonable in requiring at least the same amount of strength as they had considered necessary for the security of their works. These works also being large, and the structures heavier in proportion to their moving load than may come upon them than the Torksey Bridge, the metal is in a better condition to receive the strains. In no part of the very valuable paper by Mr. Hodgkinson, in the Appendix to the Report of the Commissioners, do I see that the experiments decide the question, that "eight tons is a perfectly safe compressive strain" for wrought-iron, as applied to railway structures, but on the contrary (page 178), Mr. Hodgkinson states, that the breaking weight should be "reduced in that ratio, or even a greater" (speaking of a ratio which reduced it to a weight corresponding to eight tons pressure per square inch on the top), "since the computation is made on the supposition of the tube being *without joints and loaded without vibration*;" and at page 123, he states that the results of an experiment showed that long-continued impact, producing a deflection of less than one-fifth of what would be required to injure the tube by pressure was completely destructive to the rivetting. Now although the effect of a train producing deflection is not the same as that produced by a falling body, some value is certainly to be attached to it when the deflection produced by it exceeds considerably one-fifth of that deflection which would injure the tube if loaded without vibration.

This effect is not so much due to velocity, I conceive, which question is very fully treated, and as applied to a bridge of this span, set at rest by the paper by Professor Willis, appended to the same report, as to the effect of the irregularity of motion caused by imperfections in the roadway, and want of steadiness in the rolling weights.

Thirdly, With respect to the communication of Mr. Fairbairn, alluded to by Mr. Fowler, I have to state that that communication was made in consequence of an interview which at my request Mr. Fairbairn granted me, relative to the mode by which he had computed the strength of this bridge, as given in a letter dated January 26th, referred with other correspondence to me for further report, and which letter had been enclosed by Mr. Fowler for the consideration of the Commissioners. I only refer to this subject to remark, that the calculations, in both communications by Mr. Fairbairn, are made upon the considera-

tion that each bridge over each opening was a separate and distinct structure dependent on itself alone for its strength. The first of these computations was forwarded by Mr. Fowler without remark as to the principle of continuity not having been considered, and although a casual reference had been made by Mr. Fowler to that subject in conversation with me, it had never been urged upon me by him as an important element in the consideration of the bridge until the receipt of his letter of the 20th ult., dated one month after my report, with the stipulation as to strength, had been forwarded to the Railway Company, and which report was based upon the consideration of the tubes being detached from one another. I certainly considered the bridge as if it had been two distinct structures, and if by my doing so the Company have lost the use of their line, and been put to inconvenience, I can only state, that from the nature of the structure, as well as from the fact of the subject not having been urged upon me, I conceive that the Company can have no cause of complaint.

A slight description of the nature of these structures will be necessary in order to explain this subject. The tubes which support the weights over these spans are built up of boiler-plate and angle-iron, rivetted together, the top of each tube consisting of cells extending the whole length of the tube, and the bottom of plates in contact with one another. This cellular top and plate bottom are kept in their relative position by sides, also composed of boiler-plate; and in the sustaining of weights the upper part or cellular top is submitted to compression, and the bottom of the tube to tension; at least this is what occurs in an ordinary bridge of one span, and to provide resistance for these antagonistic forces, those peculiar forms of top and bottom have been adopted, and also a peculiar system of rivetting the plates to suit each condition. In the bottom, where tensile strains are resisted, the plates are joined with great care by a system of chain rivetting, in which the strength of the plates is impaired as little as possible, and every joint is properly provided with additional covering plates to maintain the value of the bottom, which



may be considered as a chain, whereas the top being submitted to a crushing force, the plates are only brought together with square or butt-joints, with small plates placed on each side of them and a single row of rivets, merely to prevent them from sliding over one another. Now, in a bridge of two or more spans, in which the tubes or beams passing over them are continuous, it is obvious that over the intermediate points of support the strains exerted in the top and bottom are reversed, and the top has to resist tension and the bottom compression.

Under these altered circumstances, provision should be made by adopting the chain principle in the top where exposed to tension. This has not been done in the Torksey Bridge, and will explain the remark before made, that the nature of the structure assisted in leading me not to consider the two spans as formed of one continuous beam.

I have now, however, since your reference, fully considered the subject, which I should have been willing to do before, had it been urged upon me, as the advantage of continuity is an old and universally acknowledged principle, and could only be neglected in consequence of some peculiarity of construction. In order to test the value of continuity, as applied to this particular bridge, the ballast was removed from it, so as to leave a load the weight of which could be estimated with tolerable certainty. It amounted to 144·8 tons over each opening, to which was added an evenly distributed load of 144 tons, which was placed on each opening on succession, the deflections of each tube being observed in both experiments at every five feet of its length. The result very nearly corresponded with theory, the greatest deflection in no case exceeding ·15 of an inch beyond that deduced by calculation. These experiments were made with great care, and are, therefore, to be fully relied on. Mr. Fowler, assisted by Messrs. Wyld and Pole, having afforded every possible facility and assistance in rendering them trustworthy.

Considering, therefore, the continuity of the bridge as a fully established fact, it remains to be considered what is the greatest strain that may be brought upon any part of it in practice; and here applying the calculation submitted to the Institution of Civil Engineers in an able paper by Mr. Pole, and supposing both spans to be equally loaded with 400 tons, as stated in my former report, I find that the compression on the top plate at the point of greatest strain is 4·25 tons, and the tension on the bottom 3·91 tons per square inch. I find also that the tension on the top plate over the centre pier is 7·18 tons, and the compression on the bottom the same, these results being calculated under the supposition that the whole sectional area of the top, including plates and angle-irons, is effective, without any deduction for the diminished strength of plates joined by single rows of rivets, as before described.

But in order that there may be no question as to the amount of load, it will be well to submit for the consideration of the Commissioners similar results obtained with weights concerning which no question can arise, as they can be made up of loads in use at the present day upon railways in this kingdom, and may, therefore, reasonably be expected in the course of the public traffic to come upon this bridge:—

Weight of permanent load, as reduced by Mr. Fowler,	
with two inches of ballast	164·3 tons.
Load taken as equally distributed at two-thirds of a	
ton per foot.	173 „
Total load	337·3 „

Appendix No. 51.

Manchester,
Sheffield, and
Lincolnshire
Railway.
(North Leverton to
Saxelby.)

Appendix No. 51.

—
 Manchester,
 Sheffield, and
 Lincolnshire
 Railway.
 (North Leverton to
 Saxelby.)

With a load of this weight upon each span the tensile strain per square inch upon the top, and also of compression on the bottom plate of the tube over the centre pier, will be 6·06 tons, and in the case of only one train of the weight of two-thirds of a ton per foot passing over both openings of the bridge, in consequence of the position between the tubes of the rails, about three-fourths of the weight of the train is carried by the tube adjoining it; the tensile strain upon the top and compression on the bottom will therefore amount to 5·22 tons per square inch, still exceeding the amount stated in my former report as a maximum.

In these results no allowance has been made for the strength of the top plate being diminished by rivetting, so that it does not exceed two-thirds of its original dimensions, where submitted to a tensile strain, nor of the form of the bottom, which does not correspond with that of those parts of such wrought-iron structures as have been heretofore erected and are subjected to compression; considering, however, that these heavy strains are upon a part of the tube which receives direct support from the masonry below, and that even though the elasticity of the metal should become injured at these points, the continuity of the tubes would nevertheless, as long as the powers of the metal were not altogether destroyed, tend to diminish the strains upon the tubes between the supports, I am induced to recommend that the Company be permitted to use this bridge for public traffic, provided their engineer will make such an arrangement of the platform that the ballast cannot be allowed to accumulate beyond the depth of two inches, upon which consideration was based his calculation of the weight of the structure; and also that careful tests should be applied from time to time, with occasional inspections by an officer of this Department, who would report whether by the effect of traffic the elasticity of the metal giving the effect of continuity to the bridge over the two spaces remain unimpaired.

The experiments as recorded are appended to this report, as they may be useful for reference on any future inspection.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

J. L. A. SIMMONS,
 Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
 April 6, 1850.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you, that in consequence of Mr. Fowler's letter of the 20th March, they have reconsidered the question of the propriety of allowing the line between North Leverton and Saxelby to be opened for public traffic, and have received a further report on the subject of the Torksey Bridge, an extract from which is enclosed; and I am to inform you that the Commissioners of Railways are willing to allow the portion of the Manchester, Sheffield, and Lincolnshire Railway, between North Leverton and Saxelby, to be opened for public traffic, on being informed that the recommendations contained in this extract as to ballast have been complied with, and on receiving an assurance from the Company that should it appear to the inspecting officer from this Department, at any future period, upon examination of the bridge, that it requires to be strengthened, the Railway Company will promptly attend to his suggestions.

I have, &c.,

To the Secretary of the

Manchester, Sheffield, and Lincolnshire Railway Company.

J. L. A. SIMMONS,

Capt. Royal Engineers.
 Secretary.

SIR,

Manchester, April 17, 1850.

I AM desired to transmit to you the following extract from the minutes of the meeting of the Board held yesterday:—

“Read a letter from Captain Simmons on the part of the Commissioners of Railways, authorizing the opening of the Leverton and Lincoln branch, and the Torksey Bridge, for passenger traffic, provided the Company's engineer will make such an arrangement of the platform that the ballast cannot be allowed to accumulate beyond the depth of two inches, upon which consideration was based the calculation of the weight of the structure; add also, that careful tests should be applied from time to time, with occasional inspections by an officer of that department, who would report whether by the effect of traffic the elasticity of the metal giving the effect of continuity to the bridge over the two spaces remain unimpaired; and that should it appear necessary to the inspecting officer at any future period, upon examination of the bridge, that it requires to be strengthened, the Company will attend to his suggestions.

“Resolved, that the Board agree to the said conditions as required, and the Secretary will communicate the same accordingly.”

I have, &c.,

Captain Simmons, R.E.,
 &c. &c.

J. H. HUMFREY,
 Secretary.

Office of Commissioners of Railways, Whitehall,
April 24, 1850.

Appendix No. 51.

SIR,

I HAVE the honour to report to you, for the information of the Commissioners, that I yesterday inspected the Manchester, Sheffield, and Lincolnshire Railway Company's line, from Saxelby to North Leverton, including the Torksey Bridge.

In consequence of your letter to the Secretary of the Manchester, Sheffield, and Lincolnshire Railway Company, dated April 6, 1850, I on this occasion confined myself to ascertaining that the recommendation as to ballast therein referred to had been complied with. I have to report that the Company's engineer has caused the longitudinal planking to be taken up, and transverse planking to be laid down, resting upon and spiked to the tops of the longitudinal bearers; the transverse planking thus comes within $3\frac{1}{4}$ inches of the top of the rails, and thus precludes the use of any greater depth of ballast than a couple of inches.

Manchester,
Sheffield, and
Lincolnshire
Railway.
(North Leverton to
Saxelby.)

Captain Simmons, R.E.,
&c. &c.

I have, &c.,
R. M. LAFFAN,
Capt. Royal Engineers.

Office of the Commissioners of Railways, Whitehall,
April 25, 1850.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you that they have received a report from Captain Laffan, in which he states that the recommendations as to limiting the quantity of ballast which can accumulate upon the platform of the bridge over the Trent at Torksey, detailed in the extract from my report forwarded to you on the 6th instant, have been complied with; and having also considered the resolution of the Board of Directors, forwarded in your letter of the 17th April, the Commissioners have desired me to communicate to you that they now have no objection to the line from Saxelby to North Leverton being opened for the purposes of public traffic.

The Secretary of the
Manchester, Sheffield, and Lincolnshire Railway Company.

I have, &c.,
J. L. A. SIMMONS,
Capt. Royal Engineers.

APPENDIX No. 52.

Appendix No. 52.

EAST LANCASHIRE RAILWAY.

East Lancashire
Railway.

SIR,

Whitehall, February 19, 1849.

IN obedience to the order of the Commissioners, contained in your letter of the 2nd instant, I have the honour to inform you that, on the 8th instant, I proceeded to the Ramsbottom station on the East Lancashire Railway, to inquire into the circumstances of the accident which occurred there on the 22nd ultimo, and now beg to lay before you the following particulars.

The decision to which the magistrates came is as follows :—

“ Case dismissed, it being considered that the signal-man gave the direction to proceed. At the same time the Bench expressed an opinion that the engineer was wrong in not having stopped the train, and also in having propelled it instead of having drawn it.”

Now, to understand the anomaly of a driver obeying a movable signal whilst the station-signal indicated stop, it should have been explained that, no watchman or policeman being kept up during the night, that as soon as the last passenger train has passed a *fixed* green light is put up at the signal-post, and the porters retire for the night. This fixed signal means that the train is to go slow and stop at the station; the breaksman or some person connected with the train is supposed (but this is not laid down in the printed code) to go forward and see that all is clear, and when he has signalled this to be the case, the train proceeds. The driver, therefore, having slowed his train on seeing the station-signal, attends to it no more, but depends upon himself or on some agreed signal with the person whom he sends forward. On the occasion of the accident, the driver was acting directly contrary to his instructions, in *propelling* instead of *drawing* a train of eight ballast-waggons, which he took up at the Bury station, down the line. He again disobeyed them in only *slowing* and not *stopping* his train. Had he been in his proper position and stopped, he must have seen that the gates were closed across the road, as the time of the accident was between seven and eight in the morning, and the gates are not more than 20 yards from the station-house. None of the persons belonging to the station were present; but a young man, a time-keeper, was there waiting to be taken up by the train, and he states that he saw the breaksman, who was on the first waggon, wave a white light, and this was considered by the driver as authority for him to advance. The breaksman himself was too ill to be examined, his thigh having been broken, or he, perhaps, might have given another version.

With regard to the gates being closed across the railway, no one could account for it. The level crossing is stated to be private property; but, as far as the public safety is concerned, it may be looked upon as an important public thoroughfare, leading, as it does, to the only bridge across the river Irwell, and to the district beyond.

Ramsbottom has a considerable population; it is situated close to the railway, and the road in question has the appearance of one that is much used, it forming, as it does, the shortest communication, though, perhaps, not the best, with the town of Bury. There, therefore, seems to

Appendix No. 52.
—
East Lancashire
Railway.

be a want of due precaution on the part of the Company in leaving a station of such importance without a watchman during the night. Had there been one, the accident could not have occurred; and had it terminated fatally, the Company would have incurred a serious responsibility. The circumstance of no one belonging to the station being on the alert at the late hour of the morning at which the accident is stated to have occurred, viz., 7.30, argues a general want of vigilance amongst the Company's servants at the station.

The adoption of a fixed caution-signal *always* exhibited, whether danger exists or not, without any one to attend to it, is objectionable, being more likely to induce carelessness than otherwise, it appearing from the evidence that this was not the first occasion of its being disregarded: and such will always be the case when there is no one to enforce obedience or report the neglect of it.

A centre stop has been put in in the middle of the road, which will prevent the gates again closing across; but there is still the great objection that some careless passenger may leave the gates open and allow cattle to stray on the line. In my opinion the public safety requires that the gates should be locked at night, and that the keys should be placed in charge of a watchman.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
GEO. WYNNE, Capt. R.E.,
Inspector of Railways.

Appendix No. 53.

—
Caledonian
Railway.
(Rockcliffe Station.)

APPENDIX No. 53.

CALEDONIAN RAILWAY.—(Rockcliffe Station.)

Whitehall, February 23, 1849.

SIR,

I HAVE to report to you, for the information of the Commissioners of Railways, in compliance with their instructions, dated the 13th February, "that I should examine and report upon the circumstances of an accident that occurred upon the Caledonian Railway on the 10th instant, near Rockcliffe station," I proceeded on the following day to Carlisle, and on the morning of the 15th examined the spot where it occurred, being about four miles north from Carlisle, and the engine and various carriages which composed the train; and afterwards attended the inquest, then sitting at Carlisle, and which was subsequently adjourned to the 21st instant, on which day I also attended; and having made known my instructions to the coroner, was furnished by him, as well as by the Railway Company, with every assistance to enable me to arrive at satisfactory conclusions. The accident having occurred on the night of the 10th instant, the railway at the precise spot had been repaired, so as to avoid the inconvenience and risk consequent upon a stoppage of the line; but the extent of the damage was pointed out to me, and afterwards verified by evidence adduced before the coroner. And I was informed that none of the roadway had been disturbed, except where absolutely necessary for the restoration of the traffic. The accompanying plan, furnished to me by the superintendent of the railway, shows the position of the train after the occurrence.

The engine was upon the line, and not in the least degree damaged, being one of the ordinary class of passenger-engine, in use upon the Caledonian Railway. The tender, which was constructed with four wheels, was entirely off the line, (its wheels being about six or eight inches from the rails,) but not uncoupled from the engine. It was much damaged, the left-hand front wheel having been forced back against the area or lever of the brake, carrying away the axle-box and one arm of the guard-plate; the brake was broken, and the trailing-wheel on the left hand was found to have shifted inwards upon its axle about four inches. The luggage-van, the coupling-chains of which were still fast to the tender, was off the rails a few inches on the same side as the tender, but not much damaged. The first-class carriage next to the van had one pair of wheels off, and the other on the line, and was held to the guard's van by the left side chain, the screw couple and right chain having been wrenched asunder.

The second-class carriage, in which the five persons were killed, and another of the passengers injured, who has since had a leg amputated, succeeded the first-class carriage. It lay at the bottom of the slope of the embankment (about 10 feet high) on which the accident occurred, having been turned upside-down, and was partially under the Post-office, one pair of wheels having been forced from the carriage, the other pair remaining in their place, but both of their axles much bent. The body was entirely crushed. The Post-office, a heavy carriage upon six wheels, probably with its load nearly nine tons in weight, was not damaged in the under framing, but a hole had been knocked in the fore-end of the body. A composite carriage followed, but was not much injured. Three horse-boxes followed, which were considerably broken, probably by the weight of the horses, as they lay over on their side on the embankment. Next followed a first, and then a second-class carriage, and last of all a horse-box. The whole of these last nine vehicles were off the rails, and with the exception of the last, either upon or down the slope of the embankment. From a few feet from the leading first-class carriage (coloured red) to the last horse-box, the left hand or west rail was either torn up or very much damaged; the right rail, with the exception of one length near the first-class carriage, which was out of its position, was scarcely stirred; and from the horse-box southwards neither the rails, sleepers, nor ballast were injured, and I was informed had not been in any way touched, up to the period of my inspection on the 15th instant. The road was in gauge, and in good condition; and there appeared nothing as regards the permanent way or works in any degree to account for the disaster. From the rear of the last horse-box, for a distance of about 215 yards, the cast-iron chairs, securing the left-hand rail

to the sleepers, were indented on the inside of the rail, as if by the passing of a wheel, but not all of them; the wheel or substance causing the marks having occasionally missed several. There was no corresponding mark upon the opposite rail or its chairs, as would have been made by a wheel secured to the other end of the same axle as that producing the marks on the left hand chairs.

From this point, marked A on the plan, for a distance of 106 yards, a trace was discernible of some hard-edged substance having run along the top of the rail, nearing its side gradually as it approached the point A, and then scoring it as if it had slid down upon the inside of the rail. Hence southwards no trace of any sort was discernible.

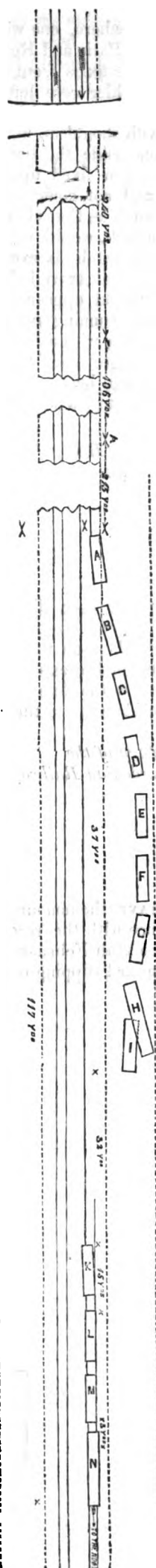
The marks described as existing upon the chairs were of so very light a nature that it could hardly be conceived that they had been produced by the wheel of a tender, which must, with its load, have then weighed from 9 to 10 tons. I therefore requested that the same tender might be filled as upon the night of the occurrence, and caused it to moved upon the rails until the wheel had been forced in upon the axle, when it dropped within the rail, and I found that it only made such marks as those near the scene of the accident, the weight being supported by the other three wheels, which remained upon the rails, and by the pressure of this wheel itself against the inside of the rail, which remained in gauge. Whilst in this position, a constant pressure existed to force the wheel inwards, and I therefore am led to believe that the sliding of the tender-wheel upon its axle must, after it had moved so far as to allow it to descend upon the sleepers and ballast, have injured the rails on the near side, which were torn up by it, and by the two carriages which remained attached to it; and that the second-class, having a broken road to run upon, met with such resistance that it burst from its connexion with the second carriage, and in doing so was hurled down the bank, the other carriages behind following it.

Having thus described the results of the accident and facts connected therewith, and stated what I conceive to have been the probable cause, I shall now proceed with a few remarks on the method by which the tender-wheel appears to have been fitted and fixed on the axle:—

The instructions given to the workmen in the Company's engine factory at Greenock are, to turn the seat of the wheel upon the axle in a slightly conical form, the smaller diameter being towards the outer end of the axle, the amount of the cone being 1-16th of an inch to a foot, rather more than the thirty-second part of an inch in the thickness (7 inches) of the boss or nave of the wheel. The centre of the boss is also turned with a similar amount of cone, but so that the inside or larger end of the conic frustum tightly fits the smaller end of that upon the axle, upon which the wheel is forced by hydrostatic pressure, equal to 250 tons. After this keys, slightly wedge-formed, are driven from the outside into ways formed for their reception, partly in the axles and partly in the bosses of the wheels. The axles are formed without shoulders on the inside, so that entire dependence is placed on the conical form of the seat of the wheel and on the accuracy of fit. In the present instance, after that the wheel of the tender had been replaced in its proper position, and the engine brought to Carlisle, the wheel was moved by repeated blows from an ordinary sledge-hammer (14 lbs. weight), 41 blows being sufficient to move it $3\frac{1}{2}$ inches inwards, and 57 to draw it completely in upon the axle. Upon examination it was found that it had been *badly fitted* upon its axle, which was not conical in form in the right direction.

There appears, therefore, but too just reason to believe that the man intrusted with the fitting of this wheel upon its axle had been guilty of neglect, as he should have known by the manner in which it must have yielded to the pressure in fixing that it was not an accurate fit, and I doubt very much whether the full pressure of 250 tons had ever been applied. This man had been discharged from the service of the Caledonian Company in consequence of a discovery, previous to the accident now under consideration, of a misfit in another wheel.

From the evidence adduced before the coroner, it appears that although such occurrences as a loose wheel have not been common upon this railway, that nevertheless they have been



Appendix No. 53.]
Caledonian
Railway.
(Rockcliffe Station.)

Horse-box, L.&N.W
No. 63.

2nd class, C. R., No. 8.

1st class, L. & N. W.,
No. 352.

Horse-box, C.R., No.9.

Ditto L. & C., No. 3.

Ditto G. J., No. 40.

Composite, S.C., No. 7.

Post-office, L. & N.W.,
No. 6.

2nd class, L. & N. W.,
No. 269.

1st class, C.R., No. 17.

Luggage van, No. 2.

Tender }
No. 57.
Engine }

Engine

Appendix No. 53.
Caledonian
Railway.
(Rockcliffe Station.)

frequent elsewhere, one witness having known a number of cases in similarly constructed axles on the Paris and Rouen Railway. As it is clear, therefore, that wheels do occasionally slip upon their axles from neglect in workmanship, it would be well if in future constructions a slight shoulder were left, or some other means provided to prevent them from moving to such an extent as would become dangerous. An objection has been taken to the construction of axles with shoulders, in consequence of their greater liability to fracture, which generally takes place inside the boss of the wheel at the shoulder; and therefore great numbers of wheels are now fixed upon their axles, either in the manner above detailed or even with parallel, and not conical seats, in which everything depends upon workmanship. A slight shoulder, such as that above mentioned, which for this purpose need not exceed the sixteenth part of an inch, would not, I conceive, be found injurious, unless in an axle the strength of which might not be in excess. Upon considering this accident, therefore, in which the wheel that shifted had travelled from 12,000 to 13,000 miles, and the evidence adduced in the inquiry, it would appear advisable, if such wheels and axles as are fixed without shoulders, and are now running upon railways, were carefully examined, and some means provided, either by a key with a head to it on the inside, or a false shoulder, or some such remedy as will easily suggest itself to those intrusted with the care of the locomotives and carriages upon railways, as will be an effectual preventive, even in case of an ill-fitted wheel, to its motion along its axle to such an extent as to be productive of serious results.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
J. L. A. SIMMONS,
Capt. Royal Engineers.

SIR,

Office of Commissioners of Railways, Whitehall,
February 26, 1849.

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the report made to them by Capt. Simmons, after inquiring into the circumstances attendant on the fatal accident which occurred on the Caledonian Railway on the 10th instant, and to express their hope that the remarks made therein by Capt. Simmons, with respect to the fixing of the wheels of railway carriages upon their axles, will receive the careful consideration of the Directors of the Company.

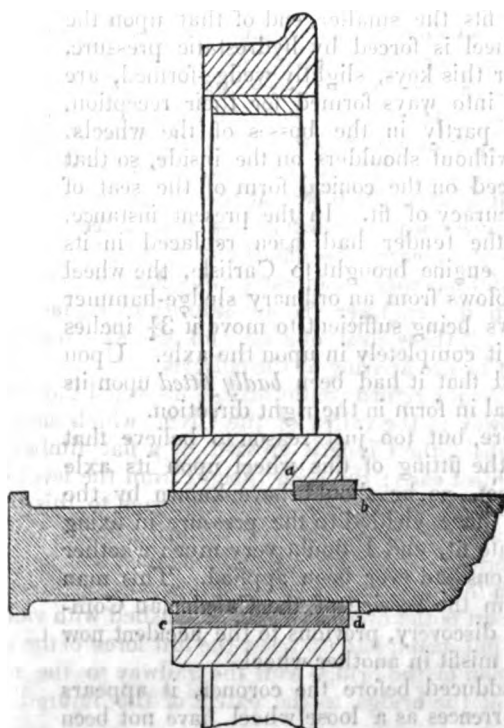
The Secretary of the
Caledonian Railway Company.

I have, &c.,
H. D. HARNESS,
Capt. Royal Engineers.

SIR,

Company's Offices, George-street, Edinburgh,
March 29, 1849.

I HAVE the honour to forward a sketch-tracing of the mode adopted on this railway, in compliance with the recommendation of the Inspector of Railways, communicated in your letter of the 26th February, for preventing the possibility of the recurrence of an accident from the inward slipping of a wheel upon its axle.



A small cottar, A B, has been introduced, partly countersunk into the axle, and partly into the boss of the wheel. The expense is inconsiderable, and it will be seen that as the boss of the wheel presses against the shoulder at A, while the shoulder at B presses against the axles, that it effectually prevents any inward movement; while the key CD, drawn from the outside, prevents any movement in the opposite direction.

Appendix No. 53.
Caledonian
Railway.
(Rockcliffe Station.)

I have, &c.,

J. W. CODDINGTON, *Secretary.*

Capt. Harness, R.E.,
&c. &c.

Office of Commissioners of Railways, Whitehall,
April 5, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways, with reference to the Circular from this Office, of the 26th February, requesting the attention of the Directors of the Company to the remarks of Capt. Simmons on the fixing of the wheels of railway carriages, contained in a Report of that officer, of which a copy was enclosed, to transmit to you the accompanying extract from a communication received by the Commissioners from the Caledonian Railway Company, describing the method which has been adopted by that Company to prevent the recurrence of an accident from the inward slipping of a wheel upon its axle.

I have, &c.,

The Secretaries of all
Incorporated Railway Companies.

H. D. HARNES,
Capt. Royal Engineers.

[*Extract from Caledonian Railway Company's Letter of the 29th March, 1849.*]

"A small cottar, A B, has been introduced, partly countersunk into the axle, and partly into the boss of the wheel. The expense is inconsiderable, and it will be seen that as the boss of the wheel presses against the shoulder at A, while the shoulder at B presses against the axle, that it effectually prevents any inward movement, while the key C D, drawn from the outside, prevents any movement in the opposite direction."

APPENDIX No. 54.

Appendix No. 54.

SCOTTISH CENTRAL RAILWAY.

Scottish Central
Railway.

SIR,

Whitehall, February 26, 1849.

I HAVE to report to you that, in accordance with the appointment of the Commissioners of Railways, I inspected, on the 17th instant, the site of an accident which occurred on the Scottish Central Railway on the 27th November last, when the mail-train proceeding to the North was thrown off the line in consequence of the washing away of the ballast, which was caused by the choking of a culvert used to convey the water of a small burn under the railway, which was then swollen to an inordinate extent by heavy rains. The stream carries with it in suspension, or rather moves along on its bed, a considerable quantity of fine sand, which being deposited in the culverts, narrows the channels, and they are, therefore, constantly liable to become choked. It crosses under the railway in three places, the upper of which produced the accident in November last. This (the upper) culvert has been replaced by a stone drain about 4 feet square. The culvert lowest down in the course of the stream is 3 feet in diameter, of which at least one-half was at the time of my inspection filled with sand. The centre of the three culverts was somewhat less than 2 feet square. In ordinary times the smallest is quite sufficient to carry the small stream which constantly flows; but, from experience, it appears doubtful whether it can carry away flood-waters, even when free from deposit. I therefore, suggested to the engineer the advisability of replacing it by one of larger dimensions, of keeping them all three clear of sand, and of endeavouring by some means to cleanse the stream from deposit before arriving at the culverts.

On the 20th instant, on my return southwards, I inspected the state of the bridges and works of the Caledonian Railway in the valley of the Clyde, which have lately suffered from floods. At 55½ miles from Carlisle, the Clyde is crossed by a flat timber bridge, at an angle of 55°, having four spans of 40 feet each; the clear height from the level of mean water to the under side of the timbers being about 14 feet. The approach to this bridge on the south side is by an embankment across a flat meadow, over which, during floods, the water has been accustomed to extend. On the north side the bridge abuts against a steep gravelly bank upwards of 50 feet in height, and upon the occasion when the injury was sustained, the water being dammed across, and not finding an outlet over the meadow, rushed with violence along the high bank opposite, which, being in a bend, had to resist the full force of the stream, and, undermining it, cut off the communication of the bridge with the railway to the north. The Company have extended the opening of the bridge to the extent of the injured bank, and have footed the

Appendix No. 54.
—
Scottish Central
Railway.

slope temporarily with a dry stone wall, but the works were not completed, and I was informed that, for this dry stone-work, a more substantial wall in masonry will be substituted.

The other place where injury was sustained at the same time, is at Lamington, 62½ miles from Carlisle, where the bed of the river Clyde, has been diverted slightly, the original course having been between a high gravel bank on the south side and a meadow on the north side, to prevent which from being flooded a bank has been thrown up. The river, in consequence of the great obliquity at which it would have been traversed, has been slightly diverted, so that the bridge crosses the new bed at an angle of 60°, there having been five openings or bays of 40 feet each, and two of 22 feet, with a clear height above the mean level of the river of about 11 feet. In this case, in consequence of the diversion, the set of the current is against the north side, where the bridge is approached by an embankment across the meadow; and when the flood occurred, the bank which keeps the water from the meadow burst some distance above the site of the bridge, and the current set against the railway embankment a quarter of a mile north of the bridge, where it joins the higher land, and where the meadow is at a lower level than the bed of the stream at the bridge, and finding no outlet, the water returning along the embankment forced a way for itself at the end of the bridge, clearing away its connexion with that part of the railway embankment which remained.

The engineer proposes a still further diversion of the river above the bridge, so as to set the current more directly through it, to pave the bank approaching the bridge which has to resist the force of the stream, and he has already increased the water-way by an addition to the length of the bridge, and has also inserted in the embankment a timber viaduct at the point where the force of the stream was felt, after carrying away the embankment. The engineer expects that the measures at both of these places will be efficacious; but as rivers when interfered with in their natural courses may be expected, more particularly when liable to heavy and very sudden freshets, as in the Clyde, to take effect upon the works so interfering with them, and as the effects and extent of these freshets are not well ascertained, since the erection of the works of the Caledonian Railway, it would be a safeguard against accident if, in case of floods, or even very heavy rains, or thaws of snow, the plate-layers or watchmen along the line received particular orders to examine those places where there is a possibility of a recurrence of similar damage, and if the engine-men were desired on such occasions to approach them with caution until they receive information from the watchmen that the road is secure. The freshet from which this injury was sustained was reported to me as having been of such a nature as is seldom seen in the valley of the Clyde, heavy rain having caused a rapid thaw of the snow, then about 6 inches in depth, the water, finding its way into the rivers and brooks in a very short space of time, in consequence of the nature of the surrounding hills and the fall of the Clyde at this part of its course being from 16 to 19 feet per mile; the railway works received a very heavy trial, and it is satisfactory that the bridges themselves remained uninjured.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

Appendix No. 55.

York, Newcastle,
and Berwick
Railway.

APPENDIX No. 55.

YORK, NEWCASTLE, AND BERWICK RAILWAY.

SIR,

March 20, 1849.

IN obedience to the orders of the Commissioners, I proceeded to Darlington on the 6th instant to inquire into the circumstances of an accident that happened to the down express train on the 3rd instant, a little after 5 P.M., at a place called Morden Cars, on the York, Newcastle, and Berwick Railway, 6 miles north of Darlington. On my arrival at Darlington, I found the inquest over, and that the jury had recorded a verdict of accidental death. The proceedings were very short, and of the witnesses examined none were able to form a conjecture as to the cause of the accident. Having carefully read over the evidence given on the inquest, and made an abstract of it, I proceeded next morning to the scene of the accident. Before recording my own observations, I beg to lay before the Commissioners the abstract I made from the depositions, first premising that the train consisted of engine and tender, guard-van, and three first-class carriages, placed in the order enumerated:—

Thomas Wright, a clerk of the Company, observed a check, and in a few seconds the carriage in which I was came to a stand still; I found the train and carriages were off the line, the carriage in which I was, canted on one side; the tender was lying across the rails; the engine was in the bog on the east side of the line; the fireman, John Hardy, was lying about five yards from the tender on the outside of the other line of rails; he was insensible; John Love, the engineman, was lying in the middle of the way of the down line, his head hanging over one of the pieces of timber;* he was not quite dead at that time, but died shortly after; the speed was from 45 to 50 miles an hour. Hardy had no bones broken, but is since dead; the first mark on the line where the engine left was about 17 yards from where the rails were ploughed up; the last carriage was about 67 yards from where the first mark was; deceased had a wound

* The piece of timber here alluded to is a transverse piece connected with the longitudinal timber framing, on which the rails are laid for a short length at this spot.

in his forehead. The train has about an hour to go from Darlington to Newcastle, a distance of nearly 39 miles.

John Paine, guard.—We left Darlington at 10 minutes before 5 o'clock,* heard an unusual noise with the engine, and was going to look past the van, when I was thrown down inside the van; the van was thrown on its side on the down line; we were going from 45 to 50 miles an hour, which is the usual speed; the line is nearly level and quite straight; had often travelled with the same engine; went with the deceased that day with the same engine from Newcastle to Darlington.

George Hall, Inspector of Plate-layers.—The rails were pulled up about 95 yards; for about 17 yards after the engine had gone off nothing was disturbed; about 15 yards of the up-line was torn up, and about 15 yards of the same line not disturbed, and then 25 yards of the same line pulled up; about 95 yards of the down-line was torn; the engine was lying on the east side, 10 feet from the outside rails; the engine was turned round, the carriages were a little broken but not much injured; the tender was lying on the broad-side between the up and down lines severed from the engine; and 19 yards further forward than the engine, the carriages were all to the west of the line, and the engine only, on the east, the rails had been examined the Monday-week before; thinks the engine had broken up the rails of the up-line, and the tender those of the down.

Edward Fletcher, Locomotive Superintendent.—The engine had only run two days since it underwent a thorough repair. When the engine was got out, I found the front and hind axles were bent, a hole in the fire-box,† the safety-valve torn off, and some slight injuries, the tender wheels and axles were off, and one axle bent, none of the wheels were broken.

Thomas Harrison, resident Engineer.—Supposes the accident might have been caused by the engineman shutting off the steam going round the curve, and letting it on suddenly, which might have caused the engine to jerk.

The above abstract embraces everything in the evidence bearing on the cause of the accident.

Morden Cars, the place where the accident occurred is a deep moss; the line across which was formerly laid on cross sleepers; but about three years ago a part of the railway at this spot was swallowed up in the peat, after which the line was relaid on a frame-work of timber, resting upon piles driven 60 feet into the ground; notwithstanding this, the rails yield considerably under the weight of a passing engine; I was told, however, that the drivers considered it the most favourable part of the line for making up lost time; at the time of my visit the line had of course been thoroughly repaired, and the wreck of the train, rails, and sleepers removed, and all that was left for my personal observation were the places which the engine and carriages of the train were found occupying when brought up, and the rail on which the engine mounted, and along the top of which and the succeeding one it ran for upwards of 20 feet; its subsequent course, as well as that of the other carriages, will be better understood by a reference to the accompanying plan (furnished me by Mr. Harrison, the resident engineer), than by any description I can give. The tender had all its wheels knocked off; the van was thrown down on its side, but the other carriages were standing upright and but little injured. The engine was found in the position indicated on the plan, standing on its wheels, which were buried up to the axles in the peat; but the most singular circumstance connected with its position was, that it was facing up the line—that is, in the contrary direction to which it had been going; the chimney was broken off, and buried vertically in the moss [*the place is marked on the plan*]. When I came to examine the engine, I found it was a six-wheeled coupled engine, with outside cylinders, which projected beyond the small leading wheel; its weight was 22 tons, and driving-wheels 5 feet 6 inches. It was built by Stephenson in 1841; but had just undergone a thorough repair, and had only been running two days, the distribution of the weights on the wheels I was not able to procure; the injuries which it had sustained were, the loss of the chimney and safety-valve, a hole in the fire-box on the near side, the brass rail which runs along the boiler on the same side crushed, the front and hind axles slightly bent, and one of the spokes of the front wheel also much bent, probably by a blow from the end of a rail, and the hole in the fire-box from the same cause. The machinery was comparatively but little injured; from the nature of these injuries, it appears evident that the engine must have rolled over, and before doing so, that it had taken a position across the rails, and falling first on them, was wounded in the way described, and getting a rotatory motion, finally brought it up in the reversed position in which it was found.

The circumstance of the wheel of the engine travelling for seven or eight yards along the top of the rail after mounting it, would show that the cause was not the result of any sudden jerk, which would have thrown it, not gradually, but at once off the rail; an explosion in the boiler would have had the same effect. My opinion is, that the train was running at an excessive speed; the evidence admits that it was going at 50 miles an hour; I think it probable they were even going faster; the engine, from its construction, would have a tendency to rock and pitch, and coming on the flexible part of the line with these motions, it is not difficult to conceive, in one of the lurches the leading-wheel mounting the rail, the evolutions which the engine must have gone through to attain the position in which it was found would also indicate, I conceive, an extreme velocity.

In the absence of any evidence as to the cause, all must be conjecture, and to assist others in forming their conclusions, I have given all the details I could collect; I append a letter I received from Mr. Harrison, containing his conjectures, and also a plan he has furnished, and

* This is the time the train should have left, but I ascertained subsequently at the office that it was 10 minutes late.—G. W.

† On the left hand side, high up.

Appendix No. 55. I would beg to observe, that the delay which has arisen in sending in my report has been caused by my waiting for that document.
 York, Newcastle, and Berwick Railway. I should have stated, that I found the gauge of the rails perfect.

Capt. Harness, R.E.,
 &c. &c.

I have, &c.,

GEORGE WYNNE,
 Capt. Royal Engineers.

P.S.—Since writing the above, I have received a note from the Locomotive Superintendent, giving the distribution of the weights on the wheels.

	Tons.	;
Front-wheels . . .	6	
Hind-wheels . . .	8½	
Middle-wheels . . .	7½	
	—	
	22	
	—	

Engineers' Office, Newcastle-upon-Tyne,
 March 15, 1849.

DEAR SIR,

I SEND you with this, a plan of the spot where the express train ran off the line on Saturday the 3rd of this month, and showing also the parts of the road which were pulled up, and the position of the carriages and engine, &c., and the details of the piling.

I found it impossible to trace the exact course of the engine, or to give any conclusive reason to account for this accident.

The evidence stated, that they were travelling at from 45 to 50 miles an hour, and the fireman, before he died, stated that the steam had been shut off whilst coming round the curve, and that the engineman had just put on the steam when the engine gave a jump and left the road; but it was so instantaneous that he could give no further account of it.

My impression is, that he had suddenly put on the steam, and that the engine had given a jump, and in all probability at the same moment become detached from the tender. I carefully examined the state of the road, and found it was in as perfect order as it could be, and not in the slightest deranged for any portion of it previous to the point where it was completely torn up.

My impression is, that both engineman and fireman must have been on the tender, as in case the engine broke away, the jerk would have thrown them there. The fireman certainly must have been. The engine clearly showed that it had at one time been completely on its back, and my impression is that it had rolled over, and in doing so the safety-valves were torn off, and the steam rushing out of them, and acting on the ground, together with the impetus the engine had, and which would throw the water to one end, it is just possible that the engine may have turned completely over again; this, however, is all conjecture.

I am sorry that I was from home when you came down to inquire into this unfortunate accident, as I should have had much pleasure in giving you any assistance in my power, to enable you to arrive at the cause of the accident.

I have, &c.,

THOS. E. HARRISON.

Capt. Wynne, R.E.,
 &c. &c.

Office of Commissioners of Railways, Whitehall,
 March 22, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways, to inform you that they have received a report from Captain Wynne, upon the circumstances which attended the accident to the down express train, about 6 miles to the north of Darlington on the 3rd instant, and that it appears probable from the report that the accident may be attributed to the very high speed at which the train was proceeding, over a part of the line where the nature of the foundations rendered more than an ordinary degree of caution necessary; and I am to request you to inform them whether any, and if any, what regulations have been issued by the directors of the Company, with respect to the speed to be maintained on particular parts of the line, or with particular description of engines.

I have, &c.,

The Secretary of the
 York, Newcastle, and Berwick Railway Company.

H. D. HARNES,
 Capt. Royal Engineers.

Secretary's Office, York,
 April 18, 1849.

SIR,

IN reference to the communication from the Commissioners of Railways, respecting the rate of speed of the trains over the line laid across Morden Cars, I am instructed to state, for the information of the Commissioners, that the enginemen have each had a printed order given

them to slacken the speed of the train to to 25 miles an hour when running on that part of the line.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
JNO. CLOSE, *Secretary.*

Appendix No. 55.
York, Newcastle,
and Berwick
Railway.

Office of Commissioners of Railways, Whitehall,
April 20, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 18th instant, informing them that the York, Newcastle, and Berwick Railway Company have issued printed directions regulating the rate of speed in passing over Morden Cars; and to observe to you that, as the Company have not stated, as requested, what regulations were in force prior to the accident, the Commissioners presume that none were in existence.

I have, &c.,

The Secretary of the
York, Newcastle, and Berwick Railway Company.

H. D. HARNESSE,
Capt. Royal Engineers.

SIR,

Secretary's Office, York,
April 24, 1849.

IN reply to yours of the 20th instant, I am instructed to inform the Commissioners of Railways that no *written* orders had been given to the enginemen as to the speed over Morden Cars previous to the accident; but all the enginemen had been instructed verbally to reduce their speed when passing over the Cars, and this had generally been acted on.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

JNO. CLOSE, *Secretary.*

APPENDIX No. 56.

Appendix No. 56.

London and North
Western Railway.
(Manchester and
Birmingham.)

LONDON AND NORTH WESTERN RAILWAY.—(Manchester and Birmingham.)

SIR,

April 2, 1849.

I HAVE the honour to report that, in accordance with the directions of the Commissioners contained in your letter of the 21st March, I proceeded to Manchester on the 23rd, to inquire into the circumstances of an accident on the London and North Western (Manchester and Birmingham division), which occurred on the 17th, whereby three persons were injured.

The train, which was the 11.40 A.M., started at the usual hour from Manchester, and consisted of the following carriages, ranged in the order of enumeration:—

- 1 Van.
- 1 Second-class carriage.
- 1 First-class carriage.
- 1 Horse box.
- 1 Guard's van.
- 1 First-class carriage (to which the accident occurred).
- 1 Second-class carriage.
- 1 Second-class carriage.
- 1 Mail.
- 1 Second mail.
- 1 First-class (left at Alderly).

About three miles south of the Chelford station, that is, 19 miles from Manchester, the tyre of one of the trailing-wheels of a first-class carriage, the fifth from the rear, broke; the pair of wheels became disengaged, got under the following carriage (a second-class one), threw it and the remaining portion of the train off the line, uncoupling it at the same time from the first-class carriage, which was carried along for about 200 yards before the train was stopped, the buffers trailing on the ground. The two leading second-class carriages of those thrown off the line came in contact with the parapet of a bridge, and were completely smashed, and the remaining carriage much damaged.

Two gentlemen were in the first-class carriage, one escaped unhurt, the other had his leg broken from the following cause:—he had one leg under the opposite seat, and the other on the cushion, the buffers, passing over the stones of a level crossing, caused the carriage to jerk: he was thrown forward, and his leg snapped across by coming in contact with the under part of the seat. In the second second-class carriage there were two young women, one of whom had her collar-bone broken, and the other was bruised about the body. The guard of the mail had his knee hurt. These appear to have been the only passengers in this portion of the train.

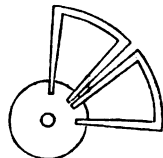
The pair of disengaged wheels was found a short way down the slope on one side, and the broken half of the tyre on the other side. None of the rails appear to have been displaced.

The Superintendent at Manchester informed me that, immediately on the arrival of a train

Appendix No. 56.
 —
 London and North
 Western Railway.
 (Manchester and
 Birmingham.)

there, the wheels of the carriages before going into the siding are all examined by an experienced workman, and that the carriage to which the accident had occurred had been regularly examined since its last trip.

On my return the next day I stopped at Crewe, to see the broken wheels which have been sent to the workshop. I found the tyre had given at the weld, and one-half of it had broken off.* The wheel was one of Locke's pattern, a description in very common use on railways. It is formed of a number of pieces of wrought-iron bent into the annexed form. The straight arms which form the spokes have a top of iron cast on to them, forming the nave; and the segmental portions are welded together at their extremities, which forms an inner tyre, to which the outside one is bolted. The wheel which broke had been running some time, and was one made by contract; it had never undergone repair. The Company now make all their own wheels, and subject them to a severe proof.



The accident appears to me to have been one which no ordinary caution could guard against; and that no blame attaches to the servants of the Company.

I wish to draw the attention of the Commissioners to a departure from the excellent regulation prescribed by Capt. Huish, for establishing a communication between the guards and engine-man, detailed in his letter of the 20 Oct. 1847; the guard's van having, in this instance, been placed in the centre of the train, instead of the rear. I have received a letter from Capt. Huish (which I annex), explaining that it is to avoid the loss of time which would result in remarshalling the trains at Crewe, were the regulation with respect to this particular train carried out. This, I have no doubt, may be a substantial reason for placing the guard's van in the position it occupied; but it appears to me that, though it may be necessary so to place the van, there is no reason why the guard, for this distance, should not occupy a seat on the outside of a passenger-carriage, provided with a break, and so be in a position to observe any derangement in the rear of the train, and communicate, if necessary, with the second guard, and so adhere to the regulations. I do not, however, gather from Capt. Huish's letter that there is more than one guard with the train.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

GEORGE WYNNE,
 Capt. Royal Engineers.

General Manager's Office, Euston Station,
 April 5, 1849.

SIR,

MR. WOODHOUSE has referred your note of 3rd to me: the facts of the case are as follows:—The train, on leaving Manchester, has carriages for Chester; the *through* guard's van is, consequently; the head of these carriages, as the Chester carriages are detached at Crewe. Any other arrangement would necessitate an entire remarshalling of the train at Crewe, and this would occupy a great deal of time.

I have, &c.,

Capt. Wynne, R.E.,
 &c. &c.

MARK HUISH, Secretary.

Office of Commissioners of Railways, Whitehall,
 April 17, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to request you to call the attention of the Directors of the London and North Western Railway Company to the enclosed extract from a report made to the Commissioners by Capt. Wynne, on the accident which occurred to a train from Manchester on the Manchester and Birmingham Railway, on the 17th ultimo, from the breaking of a tyre. It appears, from the statement contained in that extract, that the arrangements adopted with the train to which the accident occurred were not in accordance with the regulations stated to have been made by the Company in Capt. Huish's letter to the Commissioners of the 20th October, 1847, an extract from which was ordered by them to be transmitted to each of the Railway Companies as particularly worthy of their attention, and which was consequently so forwarded by a circular from this office on the 23rd of October, of which a copy is enclosed.

The Commissioners will be glad to hear that the arrangements described in that circular have not been abandoned on any part of the lines of the London and North Western Railway Company without the substitution of equally efficient precautions.

I have, &c.,

The Secretary to the
 London and North Western Railway Company.

H. D. HARNESSE,
 Capt. Royal Engineers.

General Manager's Office, Euston Station,
 April 21, 1849.

SIR,

IN reply to your letter under date the 11th instant, I beg to hand you copy of a report made to me upon the subject by the Superintendent of the Manchester and Birmingham

* The fracture at the weld showed that the joining had never been perfect.

division, and which I trust, under the circumstances, will be satisfactory to the Commissioners.

The additional remarshalling of the trains at Crewe and Stafford (which would be caused by a rigid adherence to the regulation) to the two trains in question, the running speed of which cannot be altered, since they are both mail trains, and under the exclusive orders of the Postmaster-General, would necessitate a dangerous rate of travelling, which might, in its consequences, be more serious than the very trifling risk attending the regulation under discussion.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
MARK HUISH, Secretary.

SIR,

Manchester, April 18, 1849.

IN answer to your letter of the 16th instant, relative to the enclosed communication from the "Commissioners of Railways," I find that we can arrange to run the guard in the rear of all our trains, with the exception of the 11.40 A.M. and 8.55 P.M. trains.

By running the guard in the rear of the 11.40 and 8.55, it will cause an additional shunting at Crewe and Stafford.

I will put this regulation into force with all the trains except the two before named, which I will leave, as at present, until I receive your instructions to the contrary.

I have, &c.,

Capt. Huish, London.

HENRY WOODHOUSE.

APPENDIX No. 57.

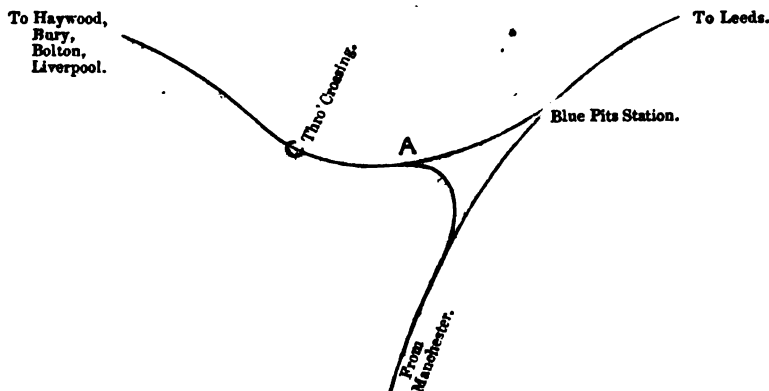
LANCASHIRE AND YORKSHIRE RAILWAY.

SIR,

April 14, 1849.

I BEG to lay before you, for the information of the Commissioners, the result of my inquiries into the circumstances of the accident which occurred on the Manchester and Leeds Railway, on the 17th of last month, whereby one man met his death.

It appears that the 7 A.M. train from Leeds divides at Blue Pits: the part for Manchester is



taken on by the same engine which brought it from Leeds, that for Liverpool is taken on by an engine despatched for the purpose from Manchester, and it was this engine which caused the accident. From the above diagram, it will be seen that this engine may either go by the direct line to Blue Pits or round the Fork, passing the junction at A, and going on to the through crossing, from whence it can be shunted back to Blue Pits station. If the engine take the direct line, it must travel tender foremost, there being no turn-table at Blue Pits; and for a single engine this is not an objectionable practice. If the turn-table at Manchester happens to be engaged, and the engine stands engine first, it must go round the Fork, as first described, in order to be right to take the train on to Liverpool. The engine-man appears to have guided himself by these circumstances, sometimes going one way, sometimes the other. On the occasion of the accident he went round the Fork, but instead of going on from the junction points at A to the through crossing three-quarters of a mile further on, he passed through the junction points, and immediately shunted back again through them (the points being weighted to keep open for the Leeds and Liverpool traffic), which of course brought him on the wrong line to Blue Pits. The pointsman turned on the danger-signal towards Blue Pits, but states that the morning was so foggy that he could not see it from the points, from which it is only 200 yards distant; the engine had not proceeded more than half-way up the wrong line when it came in contact with a ballast-engine, which was travelling down the line tender foremost; the tender of the ballast-engine was very much injured; that of the other not at all. The man who was killed was a workman, who was most improperly riding on the buffer-plank of the engine; he was jammed by the following waggon, which was raised off the rails, and pressed upon his thigh, and also pressed his back against the smoke-box.

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London and North
Western Railway.
Manchester and
(Birmingham.)

Appendix No. 57.

Lancashire and
Yorkshire Railway.

Appendix No. 57.
Lancashire and
Yorkshire Railway.

The engine-man appears to be the person altogether to blame; he had only to run three-quarters of a mile further on, when he would have come to the through crossing, which would have taken him on his proper line.* There seems also to have been a remissness on the part of the pointsman in having up only the common signal in so thick a fog. The points being completely under the control of the pointsman, a recurrence of the accident may be prevented by giving a positive instruction to him not to allow any engine ever to pass back through the points on to a wrong line.

It appears from the evidence of George Boggatt, an engine-driver between Blue Pits and Bolton, that on the return journey from the latter place he is obliged to return tender first, in consequence of there being no turn-table at Bolton. I would recommend the attention of the Commissioners being drawn to this very objectionable practice, with a view to its correction.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
April 17, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you that, having received a report from Captain Wynne upon the cause of the fatal accident which occurred near the Blue Pits station on the 17th ultimo, they are desirous to request the Directors of the Company to consider whether it would not be conducive to the public safety to establish turn-tables at the Blue Pits and at the Bolton stations, the want of a turn-table at the former station having been the primary cause of the accident referred to, and a similar deficiency at the latter rendering it necessary, as stated in the evidence attached to Captain Wynne's report, for engines to travel tender foremost, in returning from Bolton to Blue Pits.

I have, &c.,

The Secretary of the
Lancashire and Yorkshire Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

Appendix No. 58.

Stockton and Dar-
lington Railway.

APPENDIX No. 58.

STOCKTON AND DARLINGTON RAILWAY.

Secretary's Office, Darlington,
March 29, 1849.

SIR,

MARCH 27, 1849.—Hannah Beaston, of Thistleflat, near Crook, attempted to cross the railway at Blue Row, near Bishop Auckland, though warned not to do so by the gate-keeper, as a locomotive engine and a train of laden waggons were approaching. She was knocked down by the engine, which passed over one of her legs. Her leg was afterwards amputated, which brought on premature confinement, and death ensued on the morning of the 28th instant, at one o'clock.

An inquest was held at the workhouse, Bishop Auckland, before W. Trotter, Esq., coroner, and a verdict of accidental death was returned.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

OSWALD GILKES, Secretary.

Secretary's Office, Darlington,
March 31, 1849.

SIR,

SINCE my last report I have been furnished with a copy of the verdict (by the coroner), and think it better, as it is a special one, to forward it to you. I should have embodied it had I received it in time.

VERDICT.

"We find that the cause of Hannah Beaston meeting her death was accidental.

"We think that the engineman ought to be reprimanded for driving his engine at a rate above that allowed in their rules, it having been given in evidence that he was in the habit of going beyond his proper speed.

"Having inspected the plan of the line of railway, we find that the road to South Church ought to have been taken under the line, and that therefore the line at present crosses illegally the said road to

* The only excuse offered is, that he was told by the pointsman to make haste out of the way of the Manchester train, which was expected.

South Church, and we would call upon the surveyors of the highways to inspect the said line at that spot, and to take what steps may be thought proper to remove the cause of danger."

I have, &c.,

OSWALD GILKES, *Secretary.*

Capt. Harness, R.E.,
&c. &c.

Appendix No. 58.

Stockton and Darlington Railway.

Office of Commissioners of Railways, Whitehall,
April 2, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 31st ultimo, forwarding a copy of the verdict returned by the jury at the inquest on Hannah Beaston, and to request you to inform them what steps the Company have taken with respect to the two subjects commented upon in that verdict, and also to explain the circumstances under which the level crossing referred to has been substituted for a bridge.

I have, &c.,

The Secretary of the
Stockton and Darlington Railway Company.

H. D. HARNESSE,
Capt. Royal Engineers.

SIR,

Darlington, April 11, 1849.

I HAVE to acknowledge the receipt of yours of the 2nd instant, requesting to know what steps this Company have taken with reference to the two subjects commented on in the verdict of the jury, and also to explain the circumstances under which the level crossing was substituted for a bridge.

In reference to the first point, the Directors have the matter now under their consideration, and will probably issue it on Friday, either in a severe reprimand or dismissal of the engineman, should the evidence against him require such a course.

The second part of the inquiry of the Commissioners will perhaps be better satisfied by my laying before you such details as I have obtained from Mr. Thomas M'Nay, who was secretary to the Bishop Auckland and Weardale Railway Company at the time of the erection of the said gates, and which are as follows, viz. :—

"At the time this portion of the line was made the Company had not got possession of the land which would be required for making a deviation of the road in question, to enable the Company to make the excavations consequent upon building a bridge. The Act of Parliament, authorizing the formation of the line, not giving compulsory powers for the taking of lands.

"October 7th, 1842.—Notice was given to the Board of Trade of the Company's intention to open this portion of the line, with an intimation that horses might be used for a time. The Board of Trade immediately replied, and said, in case of horse-power being used, the railway would not come within the jurisdiction of their Lordships; the Company used horse-power only for about two months, in the mean time the Directors caused a pair of gates to be hung at the said crossing, built on the most modern and improved plan. A gate-keeper was appointed, who was recommended by respectable and influential inhabitants (including magistrates) of the town immediately adjacent, viz., Bishop Auckland.

"On the gates being brought into operation, the Company gave notice in the terms of the Act to the Board of Trade of their intention to use locomotive power.

"November 28, 1843.—Gave notice to the Board of Trade that the Company were ready to open the remaining portion of the line up to Crook.

"January 1st, 1844, General Pasley examined the line from South Church to Crook, which comprises the level crossing at Blue Row.

"On the arrival of the train at this point the General was detained for some time by the deputation who accompanied him on the occasion, for the purpose of pointing out to him the mode of construction and working of the gates, and the circumstances which induced their adoption; it was at the same time explained, that the Company's Act only gave permissive powers for the taking of lands, but that clause 14 of the said Act makes stipulation that good and sufficient gates shall be erected at crossings of public highways on the level, and this being the only level crossing at a public highway on the line, the Company had, as far as possible, adhered to the requirements of the Act in this respect.

"General Pasley expressed his entire satisfaction in the mode of crossing adopted, and in the construction of the gates, and the mechanical arrangement for working them; he also commented on the experience then being obtained on the subject of level crossings, referring to lines of extensive passenger traffic as compared with this line, having frequent level crossings and yet without accident.

"January 6th, 1844.—The Company received a communication from the Board of Trade, informing them that General Pasley had reported favourably on the line from South Church to Crook, and authorizing the opening."

In addition to these particulars, I have the pleasure to hand you a copy of a letter from Joseph Pease, Esq., to Mr. M'Nay, with reference to the subject, and venture to hope that the explanation comprised in the whole will satisfy the Commissioners that the Company, in their adoption of the level crossing, have not lost sight either of the safety or convenience of the public.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

OSWALD GILKES, *Secretary.*

Appendix No. 58.

Stockton and Dar-
lington Railway.

Esteemed Friend, THOMAS M'NAY,

Treasurer's Office, Darlington,
April 5, 1849.

I WELL remember being one of the deputation accompanying the General (Pasley) on his examination of the Bishop Auckland and Weardale Railway; but I observe the inquiry relates more particularly to what passed at the Highway at Blue Row, near Bishop Auckland. I pointed out the road, and called the General's attention to the railway crossing upon the level. I informed him that originally the Company had proposed to divert the road, and as from its narrowness this could not possibly be effected in its present course, the Company had hesitated, feeling that it would be a great annoyance to the public. I named that the powers obtained from Parliament were only permissive; the land-owners had thrown the greatest difficulties in the way; and to obtain land to make the diversion would be no easy task, if practicable. After examination of the compound-action gates, and expressing his decided approbation of the mechanism and its novelty, General Pasley said—

"Well, I have seen enough of the folly of any uniform Legislation compelling roads to be raised or depressed: think of that abominable case I have visited this morning at Darlington" (alluding to the Great North of England Crossing, which we all know was such a bad job for every party), "but happily the Legislature is reconsidering its former decision upon the subject, as I believe there are numerous cases where a level crossing is decidedly preferable, and with such gates this seems to me to be one."

I remarked,—

"I don't know that we are bound by having shown how at what gradient we should raise or depress the way if a bridge is made, but we have litigious and vexatious people around us, and may expect some trouble."

The General replied,—

"The best that can be done for the public must in all cases be done, and my opinion continues, that the level crossing, with these gates, is the best by far, so if you have any trouble, write to me, and I shall be able to explain the matter."

The date of that interview I cannot remember, it will be in the Railway Office. That it has worked well is proved by many years without such a casualty as the lamentable one which has recently occurred; that case resembles one some years ago near Stockton, where parties resolutely determine to persevere in daring danger in spite of all remonstrance and warning.

I have, &c.,

J. PEASE.

The Secretary of the
Wear Valley Railway Company.

Office of Commissioners of Railways, Whitehall,
April 13, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you, in reference to your letter of the 11th instant, that they do not consider the reasons given therein for the substitution of a level crossing for a bridge satisfactory; and that they will direct one of their inspecting officers to examine into the circumstances and report thereon; and upon receiving such report the Commissioners will consider whether any further steps are necessary to carry out the intentions of the Legislature.

I have, &c.,

The Secretary of the
Stockton and Darlington Railway Company.

H. D. HARNESSE,
Capt. Royal Engineers.

SIR,

Whitehall, May 16, 1849.

I HAVE to report, for the information of the Commissioners of Railways, that in compliance with the instructions contained in your letter of the 25th April, I examined the level crossing at Bishop Auckland on the Stockton and Darlington Railway referred in the accompanying documents herewith returned, and that I found that, according to the plan and section of the railway sanctioned by Act of Parliament, 1 Vict. c. 122, the road in question where the accident happened is described as the "Highway from Saint Andrew Auckland to Bishop Auckland, to be lowered 19 feet, and pass under railway."

Close adjoining the level crossing are a number of cottages from which children and persons of all descriptions must constantly be in the habit of crossing the railway, and although no public conveyance nor many carriages pass by this road, nevertheless the traffic from the 28th April to the 7th May inclusive, being the week subsequent to my inspection, amounted on an average to 83 carts, &c., 49 saddle-horses, &c., daily, being a very considerable traffic, in addition to the foot-passengers, who must be very numerous, and will probably increase from year to year. Great difficulties attend the construction of a bridge at this place. A slight diversion might be made and the road carried under the railway, which would be beneficial to the horse traffic, but it would be attended with very great expense and the destruction of house property, and the level crossing would still continue for the foot passengers residing in the houses close adjoining. The gates are of a good description, and considering the nature of the country, being a coal district, in which the inhabitants are accustomed to railways, and

that this is the first accident which has occurred since the opening of the railway in 1844, and partly owing to the neglect of the woman who suffered, I feel reluctant to recommend the Commissioners to enforce the immediate substitution of a bridge, which would cause a great outlay, destroy house property to a considerable extent, and, after all, only partially remove the risk; but if the following recommendation as to working the line be carried out, I conceive that the level crossing, unless the traffic upon the road increases very rapidly, may continue to be worked with safety.

Coming up to the level crossing from the east side, the railway being on the ascent, and the view good, the risk is small; but on the other side the railway is on a curve, and passes through a short tunnel about 50 yards long, and distant about 250 yards, at the other end of which is the Bishop Auckland station. An engine cannot be seen beyond the station. I should, therefore, recommend that some means be contrived, either by means of a bell in the gateman's box, or a fixed signal, by which to let the gateman know when an engine or train was approaching, which being rung or made from the station, would notify to him that no person must be allowed to cross the road until the engine or train had passed.

I should also recommend that a signal be erected eastward of the gate, to be worked by the gateman by means of a wire, which before allowing horses or cattle to pass, he should turn so as to stop any coming train, the signal to be seen at least 600 yards from the gate. With these arrangements, and due attention on the part of the Company's servants, I should consider that the traffic might be carried on with safety as at present, but in case of any great increase or of neglect, it might become advisable, at any sacrifice of property whatever, to get rid of the crossing by substituting a bridge.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

J. L. A. SIMMONS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
May 17, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the report made to them by Captain Simmons upon the unauthorized level crossing at Bishop Auckland, referred to in the letter from this office of the 13th ultimo, and to inform you that, under the circumstances described in that report, they do not consider it necessary at present to commence any proceedings to compel the substituting of a bridge from the level crossing in question, but that they consider it incumbent upon the Company to adopt the precautionary arrangements recommended by Captain Simmons, or others equally efficient.

I have, &c.,

The Secretary of the
Stockton and Darlington Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

Secretary's Office, Darlington,
June 1, 1849.

SIR,

I AM instructed to inform you, in reference to the report of Captain Simmons on the level crossing at Blue-row, that the Directors have given orders that the suggestions be fully carried out.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

OSWALD GILLES, Secretary.

APPENDIX No. 59.

EAST LANCASHIRE RAILWAY.

SIR,

Whitehall, June 11, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that, in compliance with the instructions contained in your letter of the 1st instant, I communicated with the East Lancashire Railway Company, and, on the 6th instant, inquired into the circumstances of a collision on that railway, which occurred on the 28th May, between Lostock Hall junction and Blackburn. From the evidence given to me it appears that, being the Whitsuntide holidays, a special excursion train left Liverpool shortly after six o'clock in the afternoon on the 28th of May, consisting of 32 carriages, which were drawn by one engine, another propelling from behind. After having travelled about 10½ miles from Liverpool, the train was stopped, in order that the engines might obtain a fresh supply of water. The tank of the leading engine was filled, but the supply at this watering-place, Ormskirk, being deficient, the propelling engine, named "*Bacchus*," was only able to obtain a few inches of water

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 Railway.

in its tank, and took so much time in getting even this, that the leading engine proceeded with the train, leaving "Bacchus" behind, which only came up with the train at Lostock Hall, being the junction close to the point where the East Lancashire Railway from Liverpool, through Ormskirk to Burnley, crosses the North Union Railway, about two miles south of Preston. At this (Lostock Hall) junction a watering tank had been erected, filled by a hand-pump, but which scarcely contains more than sufficient water for one or two engines. The leading engine required and took nearly all that was in the tank, leaving very little for the propelling engine, "Bacchus," whose tank was quite dry.

The distance the train had to travel before a fresh supply could be obtained was 10 miles, 3 miles of which is on an ascent of 1 in 100. The leading engine started from the junction at 8h. 28m. P.M. with the train, leaving the engine, "Bacchus," to have its tank replenished; but it was only able to obtain a very small supply, about 6 inches, when the regular train from Liverpool, due at the junction at 8h. 30m. P.M., arrived, and it ("Bacchus") started at 8h. 37m., P.M., and overtook its train at the foot of the incline, just as it was coming to a stand-still for want of power in the engine. The two engines, one pulling and the other pushing, were, however, able to surmount the incline, and the gradient being then favourable, they went on very well, the pushing engine having its fire damped, in order, as the driver states, that its fire-box might not be injured; the leading driver also sparing his water as much as possible by damping his fire. On arriving about a mile from Burnley there is an incline of 1 in 110 to be surmounted, which brought the train to a stand still, the leading engine not having sufficient power to draw it, and the "Bacchus" engine being powerless for want of water, and its fire nearly out. The guard, who is a night porter at Colne, and has acted occasionally as guard during the last year with passenger and luggage trains, ran forward to the driver to tell him that there was a train due, and, upon being reminded of his duty by the latter, then ran back to stop any coming train. In the meantime the fireman of the pushing engine had run back, but he was not in sufficient time to prevent a collision, as the regular train was close after them. Fortunately, however, it was comparatively a light train of only 10 carriages, and the driver and two guards were able so far to reduce the speed that the collision was of a slight nature, and the engine, "Bacchus," being in the rear, and tender foremost, received the greater part of the shock on its buffer-beam, thus shielding to a certain extent the carriages. This last train started from Lostock Hall junction at 8h. 49m. P.M., 21 minutes after the excursion train, and stopped at every station, and neither guard nor driver received any notice at any of these stations as to the preceding train. Immediately that this train had been arrested in its progress, the guard ran back with a signal, but had scarcely gone a hundred yards when another special excursion train from Preston arrived, consisting of 21 carriages, and not having sufficient notice, it could not be stopped before running into the preceding train. The occurrence took place soon after leaving a sharp curve, round which the view was very soon obstructed. Miraculously no person was seriously injured, although the trains were all very full, and consisted altogether of 63 carriages with 4 engines.

In making the inquiry into this accident, I have had much difficulty to arrive at a satisfactory conclusion as to the neglect or otherwise of the station-master at Lostock Hall junction, in allowing the excursion train to start without ascertaining that the engines were sufficiently supplied with water. The drivers state that they remonstrated with him, stating that they could not reach their journey's end, and that they continued to do so to the last; whereas he states that they started willingly after having been under the water-tank, and without remonstrance. He, however, engaged to warn the driver of the regular train, so that he might assist them, if necessary, on the incline; but, seeing the excursion train well up the incline, four miles off, and it having had 21 minutes' start, he did not consider it necessary, more particularly as the excursion train had to stop at no intermediate stations, and the regular train at four. The second special train, being the last of the three, passed the junction at 8h. 55m., six minutes after the preceding one had left. Several points affecting the safety of the public appeared in the course of the investigation, and to which the attention of the Company might with advantage be drawn.

1st. The supply of water upon the line is not sufficient for the requirements of the extraordinary traffic which may arise from such causes as are of frequent occurrence, more particularly in a densely populous and manufacturing district. This defect is, I am informed by the manager, in course of being remedied.

2nd. The front excursion train was drawn by one engine, and propelled from behind by another, a practice which has been commented on in the printed reports of the Railway Department of the Board of Trade as highly objectionable. And, moreover, one of these engines travelled tender foremost, a practice which has also been similarly commented on, and has been very generally discontinued by all railway companies, this Company themselves having prohibitory rules in their printed regulations issued to their servants to meet both cases. The alleged excuse is, that the station accommodation is inadequate to the traffic, and so arranged that, as in the present case, an engine having arrived with one train cannot, when a train is being prepared to start on the other line, be turned and watered without a very considerable delay.

I therefore went to Liverpool, and, having watched the working of the station for an hour, was fully convinced of its insufficiency for the conduct of the present ordinary traffic in a satisfactory manner, much less when an extraordinary increase, such as occurred in the Whitsuntide holidays, may occur. The station, with the railway for about three miles from it, is the joint property of the Lancashire and Yorkshire and East Lancashire Railway Companies, and requires immediate attention and improved arrangements.

3rd. The leading train was without a red signal lamp at its tail, a practice also highly

reprehensible, caused by the neglect of the Company's servants and their own defective arrangements, which, it appears, permit engines to leave their stations and proceed along the line without a red lamp at all.

4th. The leading train, consisting of 32 carriages, was in charge of a night porter, who has been employed as an occasional guard, assisted by three other porters acting under him as guards. The regulations of the Company do not require that any report of the times of arrival and departure of special trains should be made at each station, and I consequently, in the course of inquiry, was not able to ascertain the precise time at which this train was on various parts of the road, nor even of its leaving Liverpool, and this when the guard knew that another train was due close after him. It appears to me that special trains carrying passengers require the same amount of care and precision in working as other trains, and I would strongly recommend that a report should be made of them, as well as of all other trains, of the time of arrival at, and departure from, and passing all stations, by the guard in charge. The noting of these times would serve to keep the guards on the alert, and be a great check upon all parties, and would tend much to assist in ascertaining the parties who may be to blame in the working of the line, and so tend materially to the safety of the public. In the present instance, for want of reports of this nature, I am unable to ascertain whether the regulations of the Company as to the interval of time between the passing of stations by different trains, or where there are fixed signals, were enforced. It appeared, however, in the course of the inquiry that the station-master at Cherry-tree station, about one mile from the scene of the collision, had neglected his duty, according to his own showing, in not putting on the stop-signal at all after the passing of one of the trains. His evidence, however, was altogether so confused, and being in direct opposition to that of several other persons on one point, whether the regular train stopped or did not stop at his station on the evening in question, a fact concerning which one would imagine that there could be no difference, that I could place no reliance on anything he said.

5th. In dealing with these questions several minor points of neglect of duty appeared on the part of the servants of the Company, and a want of attention to regulations, which were commented on to the individuals by me at the time of the inquiry. But in concluding this report, I would suggest, for the consideration of the Company, whether all trains carrying passengers do not require that a regular and thoroughly experienced guard should on all occasions accompany them; for although the train in ordinary course may not require to be stopped upon the line, it is impossible to foresee all the exigencies which may arise requiring the most intimate knowledge of the working of the line before that train arrives at its destination. And also, I would suggest to them whether they were not a little premature in exciting an extraordinary excursion traffic when the line and its acquirements were in its infancy, and the terminal station at Liverpool professedly inadequate to the ordinary traffic.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
June 14, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of a report made to them by Captain Simmons, on the circumstances attending the two cases of collision which occurred on the 28th ultimo, between Lostock Hall junction and Blackburn, and to request you to call the immediate attention of the Directors of the Company thereto.

The Commissioners do not consider it necessary to refer in this communication to the several defective arrangements remarked upon by Captain Simmons, as each deserves the serious attention of the Company; but it appears to them that the encouragement of an extraordinary traffic by running excursion trains in the existing state of the Company's arrangements, which is remarked upon in the concluding paragraph of the report, was highly injudicious.

I am also to inform you that Captain Simmons has been directed to report upon the present state of the Company's station at Liverpool.

I have, &c.,

To the Secretary of the
East Lancashire Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

APPENDIX No. 60.

LEEDS AND THIRSK RAILWAY.

SIR,

Whitehall, October 9, 1849.

I HAVE to inform you that, having received the instructions of the Commissioners of Railways, conveyed to me in your letter of the 22nd September, to examine into the circumstances attending a fatal accident to James Clarke, reported to have occurred on the evening of the 20th ultimo, at the Horsforth station of the Leeds and Thirk Railway, I proceeded to Leeds, and having communicated with the Secretary to the Company, went to the spot and examined the site, and such parties as were likely to be able to throw any light upon the subject. A sketch of the station is annexed, from which it will be seen that the railway is on

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Appendix No. 59.

East Lancashire
Railway.

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Leeds and Thirk
Railway.

Appendix No. 60.
Leeds and Thirsk
Railway.

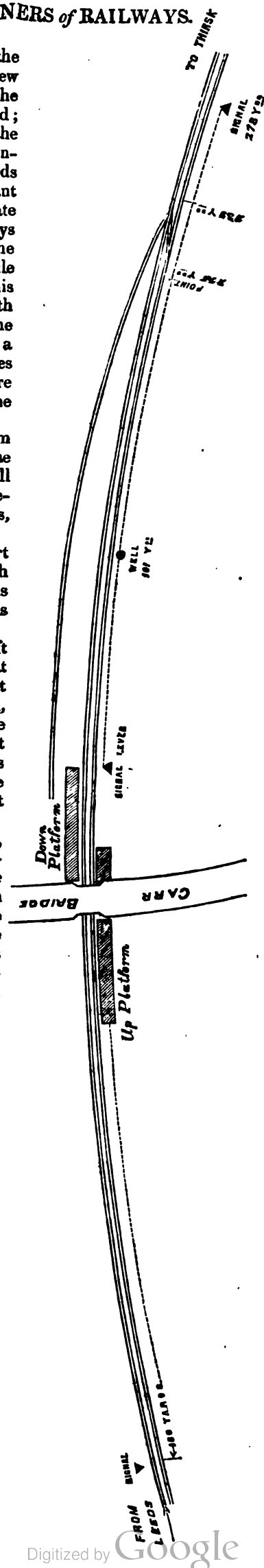
a curve; it is also in a cutting, by which means, with the bridge carrying a road over the line close adjoining, the view in both directions is very much curtailed. To render the working of the station secure, two signals have been erected; that for the down-line from Leeds, about 180 yards from the bridge, worked by a wire from the south end of the down-platform; the other, for the up-line from Thirsk, 278 yards from the bridge, worked from a lever, about 40 yards distant from the north side of the bridge. The station-house is situated parallel to and adjoining the down-platform, and the railways on an ascending gradient of 1 in 100, which extends from the south $3\frac{1}{2}$ miles to the station, and rather more than a mile northwards, where is the summit on the first 10 miles of this railway from Leeds; three miles of the descent on the north side of the summit being at an inclination of 1 in 94; at the foot of which gradient, which runs principally through a tunnel 2 miles in length, is the Poole-road station, $9\frac{1}{2}$ miles from Leeds. The Carr Bridge or Horsforth station, where the accident occurred, being about $5\frac{1}{4}$ miles from the same place.

Between the Horsforth and Leeds stations, at $2\frac{3}{4}$ miles from Leeds, and therefore about half a mile above the foot of the long incline of 1 in 100 before mentioned, is the Kirkstall station, whence to Leeds the railway still continues on a descent, varying up to 1 in 300, with the exception of 14 chains, before entering the station, which rises at the rate of 1 in 96.

I have thus entered in detail upon a description of this part of the line, as the nature of gradients and their position with reference to the stations will be found to bear upon the remarks which I propose to make on the method in which the line is worked.

The accident occurred as follows:—A goods train left Thirsk sometime in the course of the afternoon, but at what hour was difficult to be ascertained, as no record was kept by the guard who accompanied it, or, as far as I could learn, by any one else, even as to the time of the departure from the terminal station of the line and arrival at Poole, where it stopped to receive some parcels, and then proceeded on its journey, leaving the Poole station 14 minutes before the time at which a passenger train from the North was due, or at 7.11 P.M.

It passed up the incline and through the Long Tunnel, arriving at its southern end at 7.30 P.M.; after which it continued its journey and stopped a few yards short of the Horsforth station, for the purpose of shunting backwards on to the down-line, and so to enter a siding on the western side of the railway to get out of the way of the train from the North, which was due at this station at 7.35. The express train from Leeds to Thirsk is due about the same time, generally passing from 7.30 to 7.35 P.M.; and at the time when the goods train stopped, had not passed the station. At this point the evidence is somewhat conflicting. The driver of the goods train (John Parvin) states that, after he stopped, the porter of the station (Thomas Ely) came running to him, and asked if he knew that the train was due; and he replied, that he knew that both trains were due; and told the porter to go and put the signals on. He says, then, that the porter walked past the engine when stationary; and that, having received a signal from some person at the tail of the train, he commenced shunting backwards, and whilst doing so, the engine of the express train came up and ran against his engine, which had then almost got on to the *down* line, and was moving at a rate of about five miles an hour backwards, or in the same direction as the express. The porter (Thomas Ely) states, on the contrary, that before he got to the engine it was in backward motion, and that he told the driver that the express train was due, and not to shunt; but that he continued shunting. Seeing which, he shouted to the station-master to put the down-signal on to stop the express. The station-master crossed over to put on the down-signal, but an other person turned it for him before he got to the signal lever or handle; and as he did so, the engine had either passed or was passing the signal. The station-master's evidence tends to corroborate that of the porter, as far as the calling to him to put on the down-signal, but he did not hear



what passed between him and the driver; and the night was very dark, so that their movements were not seen. The fire-man of the engine was on the ground at the rear of the train, and was killed by a piece of cast-iron piping which was projected from the guard's van of the express train, so that his evidence is lost. The guard of the goods train states, that he saw a man with a lamp, who must have been the porter, run towards the train; and after that the train moved forwards, and that the man moved half way up or along the train. He did not hear him shout. This guard's evidence is, however, contradicted in another point; but making all due allowance for the darkness of the night, and the suddenness of the collision, and the short time there was for reflection, I do not think that it is to be expected that all these parties should precisely agree in their statement. This renders it difficult to select from them the precise bearings of the case. If the engine driver's statement be correct, he is not to blame, as he had every reason to suppose that the signals were on. If the porter's statement be correct, the driver was to blame in shunting. The express train left Leeds at 7:30 p.m., 10 minutes late, and appears to have run into the goods train at a speed of about 30 miles an hour. It consisted of four carriages, and a van between them and the engine and tender, and in which was the guard. There were between 30 and 40 passengers, of whom several were hurt. I shall now proceed to offer a few remarks on the circumstances attending this accident, which will, I trust, tend to the greater safety of the public using this railway.

First, then, it appears from the evidence of the traffic manager, Mr. Henry Tennant, that there are six passenger trains from the North, and five from the South daily, except on Tuesdays and Thursdays, when there is an additional train each way between Poole and Leeds. There are two goods trains, also, each way daily, *which do not run to time-tables*, the average time occupied on each journey being five hours. These latter trains are all passed on the road by passenger trains, for which, therefore, they must shunt; but shunting places are not appointed, that being left to the discretion of the drivers and guards in charge of the train as to where they are to shunt. The only instructions are contained in the book of Regulations issued to the Company's servants, and provide in Rule 10, that "a goods mineral or ballast train, when likely to be overtaken by a passenger train, shall shunt at least 15 minutes before the passenger train is due, and wait there five minutes after the passenger train has passed." And in Rule 69, it is desired that "the goods guard must endeavour to work their trains so as not to impede passenger trains."

This arrangement appears to be altogether faulty, and the working of the line, in this respect, does not duly provide for the safety of the public. Where the goods traffic is so very slight as that carried upon the Leeds and Thirsk Railway, at the present time only 34 miles in length, there ought to be no difficulty in working the goods traffic to a time-table; and fixed shunting places should be appointed, and invariably used, so that the drivers or guards would be relieved from the undue responsibility now attached to them, in starting on a journey with no instructions as to the getting out of the way of passenger trains beyond the above quoted regulations, and a printed passenger time-table. The instructions also seem at variance as to the person who is to be considered in charge of the train. On reading Rules Nos. 20, 27, 37, and 69, it appears doubtful whether the guard or engineman is responsible for the conduct of the train; and the station-masters, apparently, have no control over them in any way. And this leads me to remark,—

Secondly, that upon the arrival of a train at any station, whether conveying goods or passengers, the station-master ought to be made responsible for its safety and management, as far as regards its working, as long as it may be detained at that station. The guards, after the train has come to a stop, being under his orders, and only giving such instructions to the drivers as to proceeding, shunting, or otherwise, as may be approved by the station-master. In the present case, the station master at Poole states, that he told the driver to start, it being then only 14 minutes before the time at which the passenger train from the North was due. This, according to his own statement, is directly opposed to the general Regulation No. 10, before quoted, which provides that there should be not less than 15 minutes; and therefore highly reprehensible on his part. The guard states, that he did not know at what time the train was at Poole; nor did the driver, who stated, however, that he believed it was 20 minutes before the train was due, and that he started by signal from the guard. Both guard and driver, if they had been responsible, ought to have known precisely whether the passenger train behind them was due in 15 minutes or not. The necessity of this recommendation is further shown by the fact, that neither the driver nor guard of the goods train considered themselves wrong in shunting at Horsforth without the station-master's permission.

Thirdly, from the nature of the gradients it appears, that under favourable circumstances, of a moderate road and good state of rails, the time provided by the above regulation is not sufficient, as the goods train had, in the present case, barely sufficient time to be shunted out of the way of the following passenger train. It appears, therefore, that this interval should be considerably increased; the only inconvenience from which that can occur in the present state of the traffic on this railway being a slight consumption of fuel.

Fourthly, advantage and greater safety would accrue in the working of the Horsforth station if the levers by which the signals are worked were brought nearer to each other, and placed in some central position, so as to economize the time of the person employed to turn them; which might, in the present instance, have prevented the accident. I have in previous inquiries remarked, that greater safety is secured by the proximity of signals at stations; and it is very evident from the case now under consideration, when by a better arrangement of the levers, which were 40 yards apart, and by working the up and down signals, it is possible that the express train might have been stopped, and the collision saved. This suggestion might, I conceive, be applied with advantage at all railway stations to the arrangements of which it may apply.

Fifthly, the guard or fireman called to a boy not in the employment of the railway Company to hold the points while the train was being shunted; and a person not in the employ-

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Railway.

ment of the Company turned the signal for the station-master at Horsforth. The practice of calling in the aid of strangers to assist in working a railway is decidedly bad, and not conducive to public safety.

Sixthly, it appeared in the course of the inquiry, that the only guard with the express train was in the van between the passenger carriages and the engine, and therefore that the only means of stopping the train was in the front part of it. In the present instance, the van operated beneficially in breaking the force of the concussion to the passengers; but it nevertheless appears to be a wrong principle to place the only means of arresting the progress of the train in the front.

1. Because in stopping it causes severe jerking to the passengers, unless applied with great caution.

2. In the event of a collision, when the breaks are applied before the actual contact, the carriages by over-running each other drive all the breaks home, and leave no further action for the buffer-springs to break the force of the collision; and

3. In the event of a separation of a couple, the passengers are left on the line without any person having a knowledge of the mode to be adopted to prevent accidents; and

4. Should this happen in ascending an incline, the carriages may return upon the wrong line, and produce serious disasters. This applies more especially to a railway with long continued severe gradients, having stations upon them and at their bases, such as the portion of the Leeds and Thirsk before described, in reference to this accident. Had either of these carriages become disconnected from the train, it would have run back with no power to arrest it before entering the Leeds station; for it cannot be presumed that the short incline, in the reverse direction, before entering the station, would have had the effect of stopping them; added to which, they would probably have met some obstruction before reaching the station.

The Board of Trade, in their printed Report, presented to Parliament in 1841, recommended that all trains should have a break upon the last carriage; and I have often had occasion to remark the utility of the recommendation, and the consequent greater safety to the public.

Seventhly, as regards the Horsforth station, and the working of the particular train which is due thereat at 7.35 p.m., being that out of the way of which the goods train was being shunted, I have to remark, that this train is due precisely at the time that the express train is expected, and the passengers in going to it have to cross the railway upon the level of the rails. In doing so they cannot see the express train coming at a greater distance than about 200 yards; and I was informed that they are in the habit of waiting at the ticket-office or station-house until they hear the up-train coming, which can only be seen at a very short distance also. This system does not appear to me sufficiently to provide for the safety of passengers, whose security (more especially where women and children have to cross the line) ought to be maintained during crossing, by means of the signals. An instruction (No. 19) provides that, "no station shall be passed at a greater speed than 20 miles an hour, if a train be standing on the other line;" but this seems to be inapplicable where stations can only be seen such short distances, and where express trains perform rapid journeys.

Eighthly, there is one other point which I would remark upon in the regulations of the Company, that the distance, 800 yards, prescribed for a signal-man to be sent to cover an obstruction, or protect a train whilst standing upon the line, appears to me not to be sufficient upon such inclines as those before quoted, unless some other means for stopping a train besides such as could have been applied to the express or goods train in the present instance.

Copious notes of the evidence taken by me, and a copy of the Company's regulations, such as are issued to their servants, are annexed. I have only remarked upon those rules which have come under my notice in connexion with this accident. The Company informed me that they had it in contemplation to prosecute the engine-driver and guard of the goods train; but I must remark, that the principal blame appears to me to attach to the management, and not to the servants of the railway. The rules are very vague, and the system of working will, I think, from the preceding remarks, evidently be seen to be lax; and sufficient attention is not rendered to that punctuality and regularity which are so necessary to the safe working of railways. No train ought, if possible, to be worked without a time-table, and an accurate register of the arrival and departure of every train at such station, and of its passing each station, even when it does not stop, if kept independently both by the guards and station clerks, would be found to be a wholesome check upon the servants of the Company, and enable them to adjust their time-tables to suit the practical working of the railway. This last recommendation is almost unattended with expense, and can only require increased attention on the part of the employés of the Company, and therefore may, I conceive, be applied with very great advantage.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

SIR,

Office of Commissioners of Railways, Whitehall,
October 11, 1849.

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of a Report made to them by Capt. Simmons, on the collision which occurred at the Horsforth station, between a goods and an express train, on the evening of the 20th ult., and by which the death of James Clarke, the fireman of the goods train, was occasioned.

The Commissioners consider that the remarks made by Capt. Simmons in this Report upon the several circumstances attending the accident, upon the system on which the goods trains of the Company are worked, on the vague and apparently conflicting nature of some of the rules and regulations issued to the servants of the Company, and on the defective arrangements of the stopping power of the express train, together with his various suggestions on these points, and also with respect to the position of the signal levers, and the precaution required for the safety of the passengers at the Horsforth station, deserve the immediate and very serious attention of the Directors of the Company.

The difficulty experienced by Capt. Simmons in ascertaining the time at which the goods train, to which the accident occurred, was dispatched from Thirsk, appears to the Commissioners to justify the inference that the traffic arrangements of the Company must at present be defective, while the severe gradients upon the line render most careful management, and the strict enforcement of clear and definite instructions particularly necessary for the public safety. And the Commissioners trust that the subject will be carefully investigated by the Directors of the Company, and a more efficient system introduced.

I have, &c.,

To the Secretary of the
Leeds and Thirsk Railway Company.

H. D. HARNESSE,
Capt. Royal Engineers.

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Railway.

APPENDIX No. 61.

SOUTH DEVON RAILWAY.

Appendix No. 61.
South Devon
Railway.

SIR,

Whitehall, October 15, 1849.

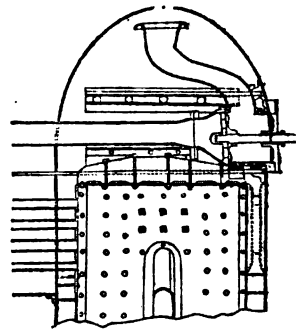
I HAVE to report to you that, upon the receipt of your letter of the 29th June, desiring me to examine into and report upon the circumstances of an accident occasioned by the bursting of the boiler of an engine attached to a goods train upon the South Devon Railway, reported in a letter from that Company of the previous day, herewith returned, I proceeded to Plympton, the station at which the accident happened, on the 2nd July, and there examined the engine, and afterwards attended the adjourned meeting of the jury summoned by the coroner, to investigate the circumstances attending the death of Henry Evans, the stoker, who was killed by the explosion, and heard the evidence of those persons who appeared and spoke as to the facts connected therewith, as also of those who by their position and scientific acquirements were considered capable of throwing any light upon the subject. The facts of the case are as follows:—The engine "Goliath" started from the Plymouth station with a goods train about 7.30 P.M., on the 27th June, and having surmounted the steep incline on leaving that station, came down a gradient of about three-quarters of a mile in length, inclined at 1 in 60, to Laira station by the force of gravity, without steam, and then proceeded about two miles over a portion of the railway, where the gradients are of a moderate nature, until arriving at Plympton station, when the speed of the train was stated to be from 25 to 35 miles per hour. At this point the ascent of the Heberden incline commences, which is very steep, about 1 in 47, and 3 miles in length. The engine-driver stated that, on arriving at the foot of the incline, he put on more steam, as was customary, by the opening of the regulator, and immediately heard a crack, and was thrown from the engine. The fireman, who was the only other person on the engine, was killed, the boiler having burst, and the engine making several bounds, and at length coming to rest not far from where the explosion took place, being turned end for end, and lying on its right side. The guard, who was in the break-van, at the rear of the train, which consisted in all of eight trucks and waggons, with very light loads, the gross weight, including waggons, being somewhat less than 60 tons, states that he heard a slight explosion, and becoming immediately enveloped in steam, he applied his break. He was not injured, nor was another person who was in the van with him. Immediately before the accident they had seen that the "all right" signal was exhibited at the Plympton station.

The signal-man on duty at the Plympton station stated, that the train was travelling at the rate of about 30 miles an hour; that the driver and the fireman were on the engine, and that the former had the handle of the safety-valve in his hand; that the train had scarcely passed him when he heard a report, and saw the place covered with steam. Upon the examination of the engine, it was found that the top of the fire-box had been forced downwards, driving out the fire and fire-bars, and the engine was otherwise much damaged. The dome and other parts of the boiler were perfect. It appears that the engine had undergone a thorough repair in April, upon which occasion it was supplied with an entire new set of tubes, and had only recommenced work on the 24th June, the accident occurring on the 27th. The engineman, George Thompson, who bears a good character, and gave his evidence in a very clear, and apparently satisfactory manner, although still confined to his bed by the shock he had sustained, stated that the steam was blowing off from the safety-valve, at a pressure of 73 lbs. to the inch, and that the gauge-glass was full, but that he had not tried the height of the water in the boiler by the gauge-cocks since leaving Plymouth; that the feed-pumps had been working from the foot of the Laira incline, that is, for about two miles previously to the accident. He further stated that neither he nor his fireman were holding down the safety-valve at the time of the accident.

From the evidence and appearances of the engine, it appears certain that the accident was produced by the explosion of the boiler, which took place by the forcing in of the top of the fire-box, which was divided in a straight line along the edge where it joins the back of the fire-box in the position marked A, in the accompanying sketch, as if it had been cut by shears, the

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crown of the fire-box remaining otherwise quite perfect. The fire-box was constructed at the same time as the engine, and was delivered to the Great Western Company, in 1842, the thickness of the copper-plates of which it is constructed then having been 7-16ths of an inch, but they are now reduced by wear as shown by the fractures to 6-16ths of an inch. Mr. Martly, the locomotive Superintendent upon the South Devon Railway, stated, that upon his examination of the engine on the evening of the 27th, after the accident he found the safety-valve, with a patent graduated Salter's spring balance, screwed down to 70 lbs. At the time of my examination of the engine, it had been taken off, as well as the other safety-valve; in taking off the latter, however, the precaution had been taken of measuring the distance of the adjusting nuts upon the screws, so that the amount of pressure upon it could be tested. It was ascertained that this amounted to 150 lbs. on the square inch, being double what it ought to have been. The engine was supplied with two of these valves, each $3\frac{1}{2}$ inches in diameter, placed close together on the dome of the engine, one being connected by a lever with a patent spring balance under the control of the driver, the other being adjusted by nuts working on fixed screws requiring wrenches to move them, is so situated that it could not well be altered while the engine is in motion. It must, therefore, have left Plymouth in this condition, and supposing a high pressure of steam to have been generated from some cause in the boiler, the screw-down valve would not be effectual until the pressure had arrived to at least 150 lbs. on the square inch. The engine-drivers are instructed not to hold down the spring balance so as to produce higher pressures than authorized, which, in the present instance, was 70 lbs. on the square inch; and I see no reason for doubting the veracity of the engine-man on this point, who distinctly denies having done so, and the more so from the fact that, at the speed at which it was acknowledged by all parties that the train was travelling, it would have been very difficult for the signal-man to distinguish that the driver's hand was upon the balance of the safety-valve as he stated, and not upon the regulator handle, which is close to that balance. It is possible, however, that he might have held down the valve, intending to get a higher pressure to assist him on the incline, justly supposing that the steam issuing from the screw-down valve would have given due notice before a dangerous pressure could have been obtained; but even this would not account for the explosion taking place as it did, according to the statement of the driver, immediately upon his increasing the supply of steam by the regulator, which would have relieved the pressure in the boiler, unless some other cause had been in operation to increase the supply of steam faster than it could be carried off by the valves and through the cylinders. Such being the case, the accident must be accounted for under the supposition that the supply of water in the boiler had not been kept up so as to cover the crown of the fire-box, which therefore would become so hot that the water at a high temperature flowing over it, either in consequence of the inclination in the railway or the sudden opening of the regulator, would be suddenly flashed into steam in such quantities that the valves and supply to the cylinders no longer sufficed to relieve the boiler. This is the only satisfactory method of accounting for the accident, and would tend to show that the soft metal plug in the crown of the fire-box was made of a metal the point of fusion of which was too high. This plug is inserted for the purpose of saving or preventing such an accident as that now under consideration, and ought to fuse at a temperature slightly exceeding that of the steam at the highest pressure at which it is used. In the present case tin was used for the plug, which fuses at a temperature of about 442° of Fahrenheit, and the temperature of the steam at the highest authorized pressure was only about 312°, which would therefore have allowed the steam to arrive at a pressure far beyond the powers of resistance of the boiler, without being fused, and was therefore useless as a precaution for safety. The question naturally arises, whether even if the plug had melted upon the steam arriving at a pressure exceeding the authorized point, the steam could have escaped as fast as generated. This appears doubtful, if the metal had been allowed to arrive at a temperature much exceeding that corresponding to the maximum pressure; but, on the contrary, if the metal plug had been so formed as to fuse at a temperature exceeding by a few degrees only that of the steam of maximum authorized pressure, an escape would have been afforded in addition to the safety valves, and timely notice would have been given that the water was becoming too low in the boiler. Such accidents as that under consideration have been very rare, indeed, and will probably continue so in consequence of the tubes being found to be generally the weakest part of the boiler, and that they often burst without producing serious injury; but it appears wrong in principle to place a soft metal plug in a fire-box for a given purpose, when it is useless on those occasions for which it was originally intended; for which reason it appears advisable that an alloy should be substituted for tin, the fusing point of which should fall within the temperature of steam, of a pressure within the powers of resistance of the boiler, and only slightly exceeding the maximum authorized as the working pressure. In consequence of the high pressure at which it was discovered that the screw-down valve was fixed, Mr. Gooch, the locomotive Superintendent of the Great Western Railway, to which Company the engine belonged, has issued the annexed circular, by which the men are made individually responsible for the pressure on these valves. As to the manner in which the water was allowed to become too low in the boiler, it appears that the driver had not tried the gauge-cocks, and which in practice drivers seldom use, trusting entirely to the glass gauge, which in the present instance he must either have neglected or it must have become choked, and so deceived him. This point cannot be ascertained, as the glass and tubes connecting it with the boiler were broken. The pumps were injured by the explosion, and the connexion



with the tender severed, so that it is not possible to know whether the feed-pumps were working aright. In conclusion, I have to regret that this report has not been earlier transmitted to to the Commissioners, but circumstances over which I have had no control have intervened to prevent it.

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Capt. Harness, R.E.,
&c. &c.

I have, &c.,

J. L. A. SIMMONS, Capt. R.E.,
Inspector of Railways.

NOTICE TO ENGINEMEN AND FIREMEN.

Paddington, July 5, 1849.

A serious accident having occurred on the South Devon Railway, in consequence of the roof of the fire-box giving way, the engine-men and firemen are desired strictly to observe the following order:—

The engine-man must once every week *himself* examine both his safety-valves, and ascertain that they are in proper working order, and that the spring valve is not screwed down to a pressure beyond 75 lbs. on the square inch in the old engines, and 100 lbs. in the engines built at Swindon. The lever-valve to be kept at 4 or 5 lbs. below these pressures; but should any of the spring balances not be long enough to act beyond the 70 or 95 lbs., as the case may be, the pressure in the boiler must in that case be kept less, so that it may always be at least 5 lbs. *below* the greatest range of the balance. The engine-man after he has examined his safety-valves each week, must make a written report in the engine report-book, kept at his station, of his having done so. Both engine-men and firemen are strictly forbidden on any account to *hold down* the lever-valve after it is screwed to the proper pressure, or at any time to press the boilers beyond the pressures allowed by this order.

(Signed) DANIEL GOOCH.

Office of Commissioners of Railways, Whitehall,
October 18, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of a report made to them by Captain Simmons, on the fatal accident which occurred on the South Devon Railway, on the 27th June, by the bursting of the boiler of a locomotive engine, and to request you to call the attention of the Directors of the Company thereto, and particularly to the observation made by Captain Simmons on the high pressure to which the second safety-valve, or that not under the control of the engine-driver, had been adjusted, and on the metal employed for the safety-plug in the fire-box. The first of these points appear only to require the strict enforcement of a simple regulation, but the second appears to deserve the careful consideration of the locomotive Superintendent of the Company, and the Commissioners are desirous to be informed of any modifications in the composition or arrangement of the safety-plug which he may after such consideration recommend for adoption in the engines belonging to the Company.

I have, &c.,

The Secretary of the
South Devon Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

Plymouth, October 29, 1849.

I HAVE the honour to acknowledge the receipt of your letter of the 18th instant, enclosing the report of Captain Simmons on the fatal accident which occurred at Plympton on the 27th June last.

Your letter and Captain Simmons' report have been duly laid before the Directors, and I am instructed, in reply, to explain that the locomotive arrangements of the line are entirely under the management of the Great Western Railway Company, but that the Board of Directors have, through their engineer, Mr. Brunel, communicated Captain Simmons' report to the locomotive Superintendent of the Great Western Company, and have requested particular attention to the recommendations which it conveys.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

W. CARR.

APPENDIX No. 62.

Appendix No. 62.

LANCASHIRE AND YORKSHIRE RAILWAY.

Lancashire and
Yorkshire Railway.

SIR,

Railway Commissioners' Office, October 27, 1849.

I HAVE the honour to lay before you, for the information of the Commissioners, the result of my inquiry into the circumstances attending a collision which occurred between two trains on the evening of the 20th September last, upon the Lytham Branch of the Lancashire and Yorkshire Railway.

The Lytham Branch is a single line 5 miles in length, connecting the seaport of Lytham

Appendix No. 62. with the lines of the Preston and Wyre Railway, with which it forms a junction near the Kirkham station.
 Lancashire and
 Yorkshire Railway.

The ordinary traffic upon this single line is managed with one engine, which runs to and fro between Lytham and the Kirkham junction, where it meets the trains upon the Preston and Wyre lines. During some of the summer months, however, a considerable local traffic springs up between places along the coast, and to accommodate this local or coast traffic, local trains are run between Lytham and Fleetwood, wholly independent of the ordinary Preston and Wyre trains. This local traffic renders it necessary to have a second engine running upon the single branch, but the times of starting are so arranged as not to interfere with the regular branch trains.

In addition to the preceding two sets of passenger-trains, it is continually happening that the branch engine, in the intervals between its passenger-trains, is employed in running special or goods-trains between Lytham and the Kirkham junction, and occasionally, when there is a great demand for coal at Lytham, a third or special engine is sent from Preston with a coal-train. In all such cases, however, the special, or goods-train, if proceeding towards Lytham, is bound to wait at the Kirkham junction till a regular passenger-train to Lytham has passed, when it follows it down the single line; and if returning from Lytham, it must in like manner wait till a passenger-train has started, when it again follows it up the single line. These regulations, if strictly adhered to, would provide for the safety of the traffic,—for the regular trains being expected at the other end, the line is kept clear for them, and on reaching that end, they give notice of the special or goods-train which follows.

In the month of September last the two sets of trains were running upon the single line, and on the 20th of that month there was an agricultural meeting held at Lytham, with a show of agricultural implements and cattle, and an unwonted increase took place in consequence in the traffic upon the Lytham Branch. This meeting is of rare occurrence, taking place, as I am informed, only once in three years.

As it was feared that, in consequence of such a sudden increase of traffic, the ordinary staff of the Lytham station would prove inadequate to the occasion, two of the Company's servants, a Foreman of the locomotive department, and a Superintendent of Goods traffic, went down from Fleetwood, the former to superintend the working of the passenger-trains, and the latter to take charge of the traffic in agricultural implements and cattle.

The last passenger-trains for Fleetwood and for the Kirkham junction leave Lytham on ordinary occasions immediately after one another at 10 minutes before 7, the branch engine returning to Lytham, and the Fleetwood engine remaining at Fleetwood for the night. On this occasion the trains were to have started at the usual time, but as it had been arranged to run two extra or special trains from Lytham at 9 P.M., the locomotive Foreman directed the Fleetwood driver to come back to Lytham, and to bring back with him some empty carriages to help to make up the special trains; he told him he would keep the line clear for him from $\frac{1}{2}$ past 8 till 9.

These directions were given by the locomotive Foreman at $\frac{1}{2}$ past 6, and had the trains started at the appointed time—10 minutes before 7—there would have been ample time to carry them out. The Fleetwood driver might have reached Fleetwood, got some empty carriages together, and returned with them to Lytham by a $\frac{1}{4}$ to 9. The Foreman's arrangement therefore was a good one if punctually carried out.

But the same Foreman, instead of starting the trains at 10 minutes before 7, allowed them to be detained to wait for passengers till 20 minutes before 8, and even then the Fleetwood train started behind the branch one, and was therefore sure to be delayed some time before it could pass it at the Kirkham junction. Under these circumstances, the instructions given at $\frac{1}{2}$ past 6 were no longer applicable, for the Fleetwood driver could not possibly get back to Lytham before $\frac{1}{4}$ past 9: yet the Foreman gave no fresh instructions; he took it for granted that the driver knew that the branch special-train would start at 9, and he trusted to the man's prudence for keeping out of its way; this was an unfortunate omission.

It is probable that the Fleetwood driver, who knew that the branch train was timed to leave Lytham at 9, would have acted as the Foreman supposed, namely, on reaching the Kirkham junction on his return at 20 minutes past 9, have waited there till the branch special-train had come up, had he been left to the exercise of his own discretion, but such was not the case.

The wording of the Foreman's instructions, telling the driver "to bring back empty carriages to help to make up the special-trains," led the man to believe that the special-train could not be made up till he came back, and this belief was strengthened by his observing that when the two trains started at 20 minutes to 8, there was not a single carriage left at the station. To make sure, however, as he thought, he asked the Superintendent of Goods traffic (who at this moment appears to have left his own branch of the traffic to direct and expedite the arrangement of the passenger-trains) whether he was to bring back carriages for the special-trains? and the Goods Superintendent, seeing no carriages left at the station, and falling into the same error as the man himself laboured under, took it upon himself, without any consultation or communication with the locomotive Foreman, to order the man "to return with as many carriages as he could get together, as they had not a single carriage to go on with, *and to make all haste back.*"

Now there were at that time 10 empty carriages unknown to the Fleetwood driver or to the Goods Superintendent, standing upon the Dock line, about a mile from the Lytham station, and the locomotive Foreman, who was aware of their being there, had determined to send for them to make up the branch special-train, which he would thus be enabled to start at the proper time,—9 o'clock. He knew nothing of the order given by the Goods Superintendent.

Acting up to the Goods Superintendent's instructions, the Fleetwood driver reached Fleetwood

at 25 minutes to 9, remained there 15 minutes to get a train ready, and then starting with 10 empty carriages, made all haste to the Kirkham junction, which he reached at 20 minutes past 9; there, at the entrance to the single line, he asked the pointsman whether they had received any fresh instructions for him, but they replied that they had not heard a word, at the same time reminding him that a special-train was to have left Lytham at 9, and might then be on the single line. The driver answered that he was aware such a train was to have started, but that he was taking empty carriages to it, that he had been told to make all haste back, and that he durst not stop; he therefore passed on to the single line at the very time that, ignorant of the order this man had received, the locomotive Foreman was starting the special-train from the other end. Here we have a strong instance of the danger that is likely to ensue, when orders to engine-drivers are issued by two different persons in the same station, without any communication with one another.

On leaving the junction, the driver made all haste to reach Lytham, and had got about half way, when on drawing near to the Moss-side station, he perceived a-head, and rapidly approaching the white light an engine bears in front. The distance at which he perceived it he estimates to have been 800 yards, but it is extremely difficult to form a correct estimate of the distance at which a light is seen at night, and upon this portion of the evidence, therefore, no reliance can be placed. He immediately reversed his engine, and sounded the whistle for the stoker and guard to apply their breaks, and when the engines had approached within about 10 yards, their speeds being by that time reduced to a very slow motion, he jumped off.

The foreman having sent for the 10 carriages from the Dock line, proceeded with these and three others which had been brought back by the branch engine from Kirkham, to make up the branch special train. At 9 it was to have started, but having been delayed by the great number of passengers, it was in reality only started at 20 minutes past 9, the foreman directing the driver to see the Fleetwood driver, who would be waiting at the Kirkham junction, and to tell him to remain there, and leave the single line clear for a cattle train that was to start from Lytham with a third engine that had been employed in the sidings, shifting and arranging the cattle trains.

The branch train therefore started at 20 minutes past 9, and was approaching the Moss-side station when the driver perceived the lights of the other train a-head. He sounded his whistle and reversed the engine, and the stoker and guard applied their breaks, but both trains, and particularly the one coming from Fleetwood, must have been running at a high speed, and the engines came into collision before they could be quite stopped.

The branch engine was not hurt, neither was the tender nor any of the carriages, and the passengers escaped with a few scratches and a violent shake. The Fleetwood engine also escaped injury beyond a bending of the foot-plate, from the tender being forced under it. The tender was slightly injured, and the coupling of one of the carriages gave way. Altogether, the shock appears to have been slight.

I attribute the occurrence of this accident to two causes:—

1st. The omission of the Foreman of the locomotive department to give the Fleetwood driver fresh instructions, when he had allowed the train to be delayed so long that it was no longer possible for the man to carry out his original instructions in safety; and

2ndly. The mistaken zeal of the Superintendent of Goods traffic, in venturing to direct the movements of the passenger trains without previously consulting with the locomotive Foreman, and his neglecting to inform that Foreman of the orders he had given.

It seems scarcely necessary to make any suggestions, for I believe these two officers are already fully aware of the nature of the mistakes they made; and there is this to be said in their excuse, that the occasion was an unprecedented one, no such sudden influx of traffic having, as I am informed, occurred on any previous occasion since the branch was opened.

In conclusion, I would remark how much the working of this and of all other single lines would be facilitated and rendered comparatively safe by the adoption of the electric telegraph. It is, in my opinion, a point worthy of the serious consideration of all Railway Companies possessing single lines, whether the application of the electric telegraph to them would not be a judicious measure even as a mere economical arrangement, for the consequences of a single collision may some day cost them in a moment a sum that would suffice to defray the expenses of the telegraph for years.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
October 29, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the report made to them by Captain Laffan upon the circumstances which attended the collision on the 20th ultimo, upon the Lytham Branch of the Lancashire and Yorkshire Railway, and to request you to call the attention of the Directors of the Company to the observations made by Captain Laffan thereon, and particularly to his suggestion that the electric telegraph should be adopted on the branch in question.

I have, &c.,

The Secretary of the
Lancashire and Yorkshire Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.
R

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Lancashire and
Yorkshire Railway.

APPENDIX No. 63.

LANCASHIRE AND YORKSHIRE RAILWAY.

SIR,

Manchester, November 10, 1849.

I HAVE the honour to lay before you, for the information of the Commissioners, the result of my inquiry into the circumstances attending a collision which occurred on the main line of the Lancashire and Yorkshire Railway, at 9 A.M., on the morning of Saturday the 3rd instant.

The point where this accident occurred was at the Heaton Lodge junction, where the London and North Western Railway Company's line from Huddersfield runs into the main line of the Lancashire and Yorkshire Railway, about a mile to the westward of the latter Company's Mirfield station.

In order to convey a correct idea of the circumstances attending this collision, it appears necessary that I should give a brief description of the nature of the traffic, and of the manner in which it is conducted.

The London and North Western Railway Company's line from Huddersfield runs into the main line of the Lancashire and Yorkshire Railway at Heaton Lodge; and about $3\frac{1}{4}$ miles further on, to the eastward, the same Company's line from Dewsbury also runs into the same main line. The London and North Western Company run trains between Huddersfield and Dewsbury, using the intervening $3\frac{1}{4}$ miles of the Lancashire and Yorkshire line.

Between these two junctions, and about a mile from Heaton Lodge, is situated the Mirfield station of the Lancashire and Yorkshire Company; and here that Company's branch from Lowmore and Bradford comes into the main line. The Company runs branch trains between Bradford, Lowmoor, Mirfield, and Huddersfield, using, for the distance between Heaton Lodge and Huddersfield, the London and North Western lines.

It thus appears that, over the mile intervening between Mirfield and the Heaton Lodge junction, there passes, in addition to the vast main-line traffic of the Lancashire and Yorkshire Railway, a branch traffic between Bradford, Lowmoor, Mirfield, and Huddersfield, and the London and North Western Company's traffic between Huddersfield and Dewsbury.

The branch-trains of the Lancashire and Yorkshire Company conduct the greater part of the traffic, both in passengers and goods, between all places on their own lines, and those on the London and North Western Company's lines as far as Huddersfield.

The passenger-traffic between places beyond Huddersfield and all places on the Lancashire and Yorkshire Company's lines, is interchanged at Mirfield, where the trains of both Companies stop. The goods-traffic between the same places is interchanged at the Heaton Lodge junction.

At Heaton Lodge the London and North Western Company have a station, at which all their trains stop, upon their own lines. Here the London and North Western goods-trains leave all goods-trucks destined for places on the Lancashire and Yorkshire Railway, and take up such trucks as may have been left for them by the Lancashire and Yorkshire trains.

The Lancashire and Yorkshire passenger-trains do not stop at Heaton Lodge; but their goods-trains stop when they have trucks to hand over to the London and North Western Company, or when the station-master stops them, by signal, to take up trucks he may have to hand over to them. I am informed, that about three in four of the Lancashire and Yorkshire goods-trains stop at this point.

The station at Heaton Lodge belongs exclusively to the London and North Western Company. The Lancashire and Yorkshire passenger-trains do not stop there; and their goods-trains, when they stop, are placed, for the time they remain, under the orders of the London and North Western Company's station-master.

From the nature of the traffic, its amount, and the manner in which it is conducted, as described in the preceding sketch, it may be inferred that a considerable extent of siding accommodation must be required at the Heaton Lodge junction, and that the siding should, generally, be so placed with respect to the main line of the Lancashire and Yorkshire Railway, over which by far the greater amount of the traffic passes, as to facilitate as much as possible the transfer of goods-trucks, and thereby diminish the interval during which every train that stops must necessarily be detained.

On examining the junction, however, it appeared to me, not only that the extent of siding at present provided is insufficient, but that, further, it is very inconveniently situated as regards the Lancashire and Yorkshire trains; the points leading to the principal sidings being placed far up on the London and North Western Company's lines (259 yards from the junction), thus causing a considerable detention to the Lancashire and Yorkshire goods-trains.

Having thus, as far as appears at present necessary, described the peculiar features of the traffic at this point, I now proceed to narrate the circumstances more immediately attending the collision. I have derived the following information from the evidence of servants of both Companies, adopting their testimony when (as generally happened) they all agreed, and on some of the minor points, whereon there were some discrepancies, following that which appeared to be the more probable account.

It appears that, about $8\frac{1}{2}$ A.M., on the morning of Saturday the 3rd instant, there were four trains, all belonging to the Lancashire and Yorkshire Company, and all moving in the same direction, at that Company's station at Mirfield.

First, there was a goods-train from Normanton with part of its trucks to be delivered at Heaton Lodge;

Next, there was a goods-train from Leeds;

Next, a branch passenger-train from Mirfield to Huddersfield, waiting for these goods-trains to get out of the way;

And then a branch goods-train waiting in a siding to follow the branch passenger-train.

The first of these trains left Mirfield about $\frac{1}{2}$ past 8, and reached the points of the Heaton Lodge junction at 20 minutes to 9. It consisted of an engine and tender, 31 loaded trucks, and a break-van. The guard had received a way-bill at Normanton, where the train was made up, directing him to leave 10 trucks of coke at the Heaton Lodge junction; and it appears that, of these 10 trucks, seven were situated near the head of the train, and the remaining three near the break-van, being separated from it, however, by three other trucks.

On reporting to the station-master at Heaton Lodge the number of trucks to be handed over to him, and their position in the train, the latter directed the guard how to place them in the sidings; and proceeded with them himself, the better to guide their movements.

As those movements were rather complicated, and consumed a great deal of time, I shall describe them:—

First, the train was drawn partially on to the London and North Western line, till the van in rear with the three trucks next it were within a short distance of the junction points. There they were uncoupled and left standing on the main line of the Lancashire and Yorkshire Railway, protected by a danger-signal, distant 432 yards from the points, and showing, as the morning was a very foggy one, a red light in addition to the disks. Meantime the great body of the train passed up the London and North Western line till it cleared the points of a short siding 120 yards from the junction. Into this it backed; and in it uncoupled, and left the last three coke-trucks. It then regained the main line of the London and North Western Company; stopped again, and uncoupled and left behind, the trucks which intervened between the last three and the first seven coke-trucks; then passing on till it had cleared the points of a second siding 259 yards from the junction; it backed into it and uncoupled, and left the first seven coke-trucks; and regaining the main line of the London and North Western Company, again backed on to the trucks it had left near the entrance of the first siding—coupled on to them, and backed the whole on to the three trucks and van, which had all this time stood upon the Lancashire and Yorkshire main line. The time consumed in these various movements to and fro appears to have been about 20 minutes. Nor were they yet ready to start, for, on rejoining the three trucks and van, it was found these latter had been drawn up so near to the junction points that there was not room for the head of the train to clear the switches, and it consequently became necessary again to back the whole train.

But in the mean time the second goods-train had come up and stopped so close to the break-van of the first that it was necessary for it to back too. Both trains were in the act of backing when the branch passenger-train, which followed, came up, and ran into the second goods-train.

Here I would pause for a moment to direct the attention of the Commissioners to the great length of time during which the main line traffic of the Lancashire and Yorkshire Railway, with all the additional traffic passing over the mile between Mirfield and Heaton Lodge, was completely blocked, owing partly to the want of convenient siding accommodation at the junction, and partly to the very inconvenient way in which the first goods-train was made up.

It appears to me that, had there been proper sidings at this junction, opening directly from the Lancashire and Yorkshire main line; and had the goods-train been properly sorted before starting, by placing all the trucks destined for Heaton Lodge in the same part of the train, the traffic need not have been stopped for more than six or eight minutes, instead of being blocked up as it was for upwards of 20 minutes.

On inquiring into the reasons why the first goods-train was sent off from Normanton so badly sorted, I was informed, that it was because the Lancashire and Yorkshire Company had no means whatever of sorting their goods-trains at that station.

It appears that Normanton belongs, partly to the Lancashire and Yorkshire Company and partly to the Midlands Company; and that the Midlands Company have charge of the station and complete control over the arrangements. One siding only is given up to the Lancashire and Yorkshire Company, into which all goods-trucks destined for the various places on their lines are put as they happen to arrive from different places, without any reference to their ultimate destination. The Lancashire and Yorkshire Company's engines take out the trucks, as they happen to stand in the siding, and are not allowed to remain in the station to sort them. It may, therefore, happen that a goods-train has a dozen trucks for the same places scattered all over a long train. This, in my opinion, is a positive source of danger on such a busy line as the Lancashire and Yorkshire Railway.

I now proceed to describe the movements of the second goods-train.

When the first goods-train, which had come from Normanton, had left the Mirfield station, the second, which had come from Leeds, proceeded to shift some trucks in the Mirfield sidings, and to take out 13 trucks which it was to take on. The engine then required water and coke. All this took up 15 minutes, and the train started at $\frac{1}{2}$ to 9, and reached the danger-signal 432 yards from the Heaton Lodge junction points at 8 minutes to 9. It passed the danger-signal, and, proceeding very slowly, went up to within a few waggon lengths of the van left by the first goods-train. There it stopped. The train consisted of an engine and tender, 19 loaded trucks, and a van; and the van, when it stopped, was about 150 yards within the danger-signal.

The morning was a very foggy one, and the danger-signal, though showing a large red light, could scarcely be distinguished at a greater distance than 8 or 10 yards.

Under these circumstances it was clearly the duty of the guard to have gone back with a red lamp and some detonating fog-signals; and to have fixed the fog-signals to the rails at distances

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of 100 feet apart, and the nearest not less than 400 yards from the train, as directed by the Lancashire and Yorkshire Company's printed instructions.

But the man appears to have considered that his train was sufficiently protected by the fixed danger-signal 150 yards behind him; and that, at any rate, having passed the signal-post, he was within the station, and under the orders of the station-master, and that, therefore, his own responsibility ceased. Instead, therefore, of going back to stop the passenger-train, which he knew must be following him, the guard left his break-van, and walked towards the head of his train, to speak to the engine driver. This was a grievous error of judgment, and unfortunately the proper person to have corrected that error, the station-master, had left his station, and gone away up his own line to conduct into the proper sidings the coke-trucks of the first train.

When the first goods-train had come back from the London and North Western Company's sidings, and coupled on the three trucks and van left upon their own main line, the guard of that train called to the driver of the second train to back, to give room for the first to back also; and the driver of the second train proceeded to back accordingly. Yet, even then, the guard of that second train does not appear to have thought it necessary to take any precautions, and the station-master, who now, for the first time, learnt the arrival of the second train, appears to have been so busy with the arrangements for sending away the first, that he attended to nothing else.

The second goods-train had backed about 10 yards, and the van was within 140 yards of the fixed signal, when the branch passenger-train from Mirfield to Huddersfield came up and ran into it.

The branch passenger-train was timed, as I understand, to leave Mirfield at $\frac{1}{2}$ past 8, but was detained to allow the two goods-trains to get away before it.

At this point a question naturally suggests itself, why were not the goods-trains made to make way for the passenger-train, according to the usual custom on railways, and in accordance with the Lancashire and Yorkshire Company's own rules? The answer, as I am informed is, that the siding accommodation at Mirfield is insufficient for the great goods-traffic now centering there; being at the outlet of the branch from Lowmoor and Bradford, all the goods-traffic of those places, and all the goods-traffic between places on the Lancashire and Yorkshire lines and the London and North Western Company's lines as far as Huddersfield, centre at that point, and so completely fill up the only two sidings that there is generally no space for the main line goods-trains to shunt to make way for a passenger-train.

On the morning in question, one of the sidings was occupied by the branch goods-train waiting to follow the branch passenger-train to Huddersfield; the other siding was filled with trucks from various places, including the 13 trucks taken on by the goods train from Leeds.

The Lancashire and Yorkshire Company appear to be aware of the insufficiency of the siding accommodation at the Mirfield station, compared with the amount of goods traffic now centering there; but they expect that, when their line through Halifax is completed, affording a more direct route between Manchester and Bradford, that goods-traffic will be materially lessened, and that then the present extent of siding at Mirfield may be found sufficient. I am of opinion, however, that, even if the goods-traffic between Manchester and Bradford were removed from Mirfield, the present sidings would be found insufficient to accommodate the branch traffic to Huddersfield, and yet allow room for the main line goods-traffic to shunt when required. It appears to me that the siding accommodation at Mirfield should be increased.

The branch passenger-train left Mirfield at 6 minutes to 9 o'clock; and about 9 o'clock, as it drew near the Heaton Lodge junction, the driver perceived a plate-layer wave his hand to him to stop. He immediately shut off his steam, and called to his stoker to put on his break. He does not appear to have thought it necessary to reverse his engine, or blow the danger-whistle for the guard to apply his break, as he had only had a momentary view of the man through the fog, and did not clearly understand what his signal meant. About 100 yards further on, however, he came up with the fixed signal-post, and the red light, then seen for the first time, at once apprised him of his danger. He reversed his engine as quickly as possible, and blew the whistle for the guard to apply his break.

The train, consisting of an engine, tender first, followed by a break-van, behind which were four carriages, does not appear to have been running at any high speed; and by the time they had reached the signal-post, the stoker had got his break screwed on. Still the various movements required to reverse the gearing, and get the steam on against the driving-wheels, and the time it took the guard to get out of the centre compartment of his van, and screw on his break, appear to have consumed the whole of the short interval it took the train to run over the 140 yards, separating the signal-post from the goods-train, and the engine, upon whose speed the only effectual check had been the action of the tender-break for 140 yards, was still moving, as far as I can judge, about seven miles an hour when the collision occurred.

The shock was not a very violent one, yet its effects extended to, and were felt at the very head of the goods-train. The engine-driver and stoker of that train, though separated from the van in rear by 19 trucks, were thrown down by the concussion: this I attribute to the circumstance of the train being engaged in backing at the time, by which movement all the trucks had been run up close together, so as to form, as it were, a continuous mass.

The van in rear of the goods-train, which, therefore, received the first shock of the collision, was in no way hurt; next it were four trucks laden with casks of oil; the trucks were not hurt, but the casks were strained, and the oil lost. Next came a new truck laden with the iron bars of which they make the tires of wheels: this truck, though new and strong, was broken up, and rendered unserviceable. Then came some trucks laden with grain, and these again were unhurt, though the grain was pitched out over the line. No further injury can be traced till we reach the engine, and here the feed-pipe of the tender was broken, showing that the shock must have been nearly as great at the head as at the tail of the train.

The engine-driver and stoker of the passenger-train had jumped off when they saw that a

collision was inevitable: they were in no way hurt. The guard had just given the last turn to his break when he was thrown violently against the side of the van, and coming into contact with it with his head first, he was for a moment rendered senseless. On recovering, he found that he was a good deal bruised; and, feeling too much shaken to go back himself, he sent the stoker back with a red flag, and detonating fog-signals; and this man went back and stopped the branch goods-train which was following.

Three of the carriages of the train were empty, but there were 10 or 12 third-class passengers in the remaining carriage. As far as I can learn, the injuries sustained by these were not very serious; the principal sufferer appears to have been a woman whose nose was broken.

The tender of the passenger-train, which was in front of the engine, was a good deal injured; the tank was separated from the framing, and shifted on it about a foot; the feed-pipes were broken. The engine was not hurt. The carriages were slightly strained; the bodies being shifted about an inch on the framing.

On reviewing all the circumstances of this collision, it is at once apparent that the more immediate cause of the accident was the neglect, or error of judgment, of the guard of the second goods-train, in trusting to the fixed signal 150 yards behind him, instead of going back to a sufficient distance to give timely notice to the train which he knew was following. I understand that this guard has been discharged from the service of the Lancashire and Yorkshire Company.

The London and North Western Company's station-master at Heaton Lodge appears also to have acted with a want of proper consideration, in leaving his station to conduct goods trucks into distant sidings. Having the charge of all trains stopping at his station, he should have remained to watch over their safety.

Again, the station-master at Mirfield appears to have been to blame for allowing a passenger-train to start so soon after two goods-trains, the first of which he knew would probably be detained some time at the Heaton Lodge junction, without cautioning the driver, and telling him to approach the junction very slowly, and with great circumspection.

But though these are the causes more immediately apparent, I am of opinion that the principle cause lies deeper; and that it will be found in the fact, that the goods-traffic upon the Lancashire and Yorkshire Railway has now out-grown the accommodation provided for it: and that the consequence is that the traffic upon that line is now attended with a degree of risk to which it ought not fairly be exposed.

Three points in the course of the Lancashire and Yorkshire Company's goods-traffic have come under review during the present inquiry, Normanton, Mirfield, and the Heaton Lodge junction, and at each the extent of siding accommodation appears to be insufficient; and at Heaton Lodge it is most inconveniently placed.

At Normanton the goods-trains cannot be sorted, and the consequence is, the frequent detention of those goods-trains for an unreasonable time at the various places where they exchange traffic.

At Mirfield the sidings are insufficient, and the main line goods-trains have frequently no means of shunting to get out of the way of passenger-trains.

At Heaton Lodge the inconvenient position of the sidings causes constant and dangerous delays to the Lancashire and Yorkshire goods-trains.

I would recommend, that the Lancashire and Yorkshire Railway Company should make every effort to obtain, at the Normanton station, the means of sorting and classifying their goods-trains. The present arrangement at that station, in my opinion, exposes their whole traffic to constant danger.

I would also recommend that the siding accommodation at Mirfield be increased, and that more convenient sidings, opening directly from the Lancashire and Yorkshire main line, be provided as soon as possible at the Heaton Lodge junction.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
November 16, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of a report made to them by Captain Laffan, on the collision which occurred at the Heaton junction, on the 3rd instant.

It appears from this report that the public safety is endangered by the want of sufficient siding accommodation at the Heaton junction and at the Mirfield stations, for the large amount of traffic at present passing those places. It also appears that this accommodation is necessary to ensure that regularity in the passenger-trains which the convenience of the public, as well as their safety, requires.

I am to inform you that the Commissioners have directed a communication on this subject to be addressed to the London and North Western Railway Company, and they hope that the Lancashire and Yorkshire Railway Company will communicate without delay with that Company, and that such arrangements as may ensure the safety and convenience of the public will, by their co-operation, be promptly effected.

I am also to inform you that the remarks contained in Captain Laffan's report, upon the amount of the trains at Heaton, have been communicated to the Midland Railway Company.

I have, &c.,

The Secretary of the
Lancashire and Yorkshire Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

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Yorkshire Railway.

SIR,

*Office of Commissioners of Railways, Whitehall,
November 16, 1849.*

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of a report made to them by Captain Laffan, on a collision which occurred on the line of the Lancashire and Yorkshire Railway on the 3rd instant, close to the Heaton junction, and which appears to be to a certain extent attributable to the imperfect siding accommodation at the Heaton station, which is under the control of the London and North-Western Railway Company.

I am to request you to call the attention of the Directors of the Company to the whole of this report, which appears to claim their careful consideration, and to inform them that the Commissioners have directed a communication to be addressed to the Lancashire and Yorkshire Railway Company, calling their attention to the observations of Captain Laffan on the deficiencies at the Heaton Lodge and Mirfield stations, and to the Midland Railway Company, with reference to his remarks upon the arrangement of the trains at Normanton, and they hope that, by the co-operation of the London and North Western with those Companies, such arrangements as may ensure the safety and the convenience of the public will be promptly effected.

I have, &c.,

*The Secretary of the
London and North Western Railway Company.*

H. D. HARNESS,
Capt. Royal Engineers.

*Office of Commissioners of Railways, Whitehall,
November 16, 1849.*

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed extracts from a report made to them by Captain Laffan, on a collision which occurred on the Lancashire and Yorkshire Railway, on the 3rd instant, near the Heaton Junction, and to request you to call the attention of the Directors of the Company to the inconvenience and dangers which may be occasioned, as shown by the extracts, by an injudicious arrangement in a train of the carriages to be detached during its progress, and to express the hopes of the Commissioners that the instructions enforced at Normanton on this subject will receive renewed consideration.

I have, &c.,

*The Secretary of the
Midland Railway Company.*

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

Derby, November 29, 1849.

REFERRING to your communication of the 16th instant, enclosing extracts from Captain Laffan's report on a collision on the Lancashire and Yorkshire Railway, I am instructed to state, in reply, that to marshal the trains at Normanton in the way suggested would be fraught with far more delay and danger than can possibly arise at the Heaton junction.

At Normanton there are about 150 trains in the 24 hours, whilst at Mirfield there are about 25.

The trains arrive from Hull and York in trains of from 40 to 60, or 70 waggons, placed indiscriminately as to station, and to re-arrange them at Normanton, as suggested, would block up the main line for a long time, occasionally for an hour and a half or two hours.

I consider that the want of sidings at Heaton junction, as alluded to by Captain Laffan, to be the evil more particularly requiring to be remedied.

I have conferred with the station-master at Normanton, who is most desirous to do all in his power to facilitate the traffic and ensure safety.

I have, &c.,

*Capt. Harness, R.E.,
&c &c.*

JOSEPH SANDERS,
General Manager.

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APPENDIX No. 64.

LANCASHIRE AND YORKSHIRE AND EAST LANCASHIRE RAILWAY.

SIR,

*Office of Commissioners of Railways,
December 11, 1849.*

I HAVE the honour to lay before you, for the information of the Commissioners, the result of my inquiries into the circumstances attending a twofold collision which occurred on the morning of the 26th ult., upon the joint line of the Lancashire and Yorkshire and East Lancashire Railway Companies, leading from the joint terminus of those Companies at Liverpool.

The joint line extends from the Liverpool terminus to the Walton junction, distant 3 miles; there the lines separate; the East Lancashire going off to the left, towards Ormskirk, and the Lancashire and Yorkshire proceeding onwards towards Wigan. The joint portion is under the superintendence of an officer representing both Companies; the only station upon it is situated in Bootle-lane, 1½ miles from Liverpool, and there the staff consists of a station-

master and signal-man, appointed by the joint Companies, and of a ticket-collector or porter appointed separately by each Company; in all, four servants.

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Proceeding from Liverpool, the line on leaving the Bootle station rises for a distance of 285 yards on a gradient of 1 in 400, thence for 1,370 yards further, the ascent is 1 in 471·6, and the last 1,240 yards of this distance passes through the Walton tunnel. From the summit which coincides with the northern mouth of the tunnel, the line descends again at a gradient of 1 in 400 to the junction, distant from the tunnel mouth 325 yards.

The first collision occurred in consequence of the 8 A.M. East Lancashire passenger-train from Liverpool—which should have stopped at the Bootle station at 5 minutes past 8—not reaching that station till 10 minutes past, and to its being further delayed in the long tunnel which intervenes between the Bootle station and the Walton junction, by the driver seeing the reflection of a strong red light a-head, which he mistook for a danger-signal. Before he could recover his usual speed after this last stoppage, his train was run into by a Lancashire and Yorkshire goods-train which had left Liverpool 5 minutes after him, and which had passed the Bootle station without stopping or even checking its speed only 3½ minutes after he had started from it.

As the passenger-train would lose 2 minutes in getting up its speed on rails that were very slippery, it appears that it only had 1½ minute's start of the goods-train on entering the tunnel, and that short interval appears to have been lost by the momentary check caused by the supposed danger-signal.

The second collision was a consequence of the first. The shock in the tunnel had detached the three last carriages of the passenger-train, and the driver went on with his engine and tender, followed by a break-van and two carriages. On reaching the Walton junction, he turned off on to the East Lancashire line; but the guard, seeing that part of the train had been left behind, called to him to stop, and the driver stopped before the buffers of the last of the carriages that had followed him were quite clear of the path of the line he had just left. In this position those buffers were struck by the three detached carriages, which had been carried over the summit by the velocity at which they were running when detached, aided by the shock of the collision, and had then run down the descending gradient towards the junction at a speed gradually diminishing, but which, when they struck the last of the preceding carriages, was still so great as to throw that carriage off the line.

Before entering into any further detail of the circumstances attending these collisions, there are two points in the evidence which I would wish to point out to the attention of the Commissioners.

The first is, that I was unable to get the evidence of the driver and fireman of the East Lancashire passenger-train, in consequence of these men forming part of a large body of the East Lancashire drivers and firemen who have lately left that Company's service, in consequence of some dispute with the managers. To this circumstance, however, I do not attach much importance, as the only value of their testimony would have been to explain how their train was so late at the Bootle station that morning; and to state how the mistake arose as to the supposed danger-signal in the tunnel. The first of these is, in my opinion, sufficiently accounted for by the fact that the morning was a very foggy one, and that the rails were slippery; and the second I was fortunately able to trace out, though with considerable difficulty, from other evidence.

The second point in the evidence is that which refers to the working of the signals at the Bootle station, and on this the witnesses made such conflicting statements, that it was only after repeated cross-examination that I was able to satisfy myself as to the real facts of the case. I shall quote the evidence on this point at some length, that the Commissioners may be able to judge whether I am right in my conclusion.

The passenger-train left Liverpool at 8, and the morning being very foggy, and the rails slippery, it only got to Bootle at 10 minutes past. The evidence was, that it reached that station at 20 minutes past, but it subsequently appeared that the latter time was taken from the clock at Bootle station, and that the clock is an uncertain one; or that, to use the words of one of the witnesses, "it goes wildly;" and that, on the morning in question it was 10 minutes fast. The train stopped for one minute at the station, and left it again at 11 minutes past 8.

At this time the station-master was absent from his station, getting his breakfast, and the signal-man had not yet come to his duty, and the only servants at the station were the ticket-collectors or porters of the two Companies. The duties of these latter appear to be undefined; each collects the tickets of his own trains, and beyond that their instructions are merely to make themselves generally useful. They do not hold themselves accountable for the management of signals, unless ordered to look to them by the station-master, and on this occasion the station-master was away. I shall quote the evidence as to the signals; but the conclusion to which I have come is, *that no signal whatever was shown from the Bootle station after the passenger train had left.*

On leaving Bootle, the passenger-train got up speed slowly, owing to the slippery state of the rails. Shortly after entering the tunnel, the driver saw the reflection of a strong red light a-head, and nearly in the same place, the two front white lights of an engine approaching on the opposite line of rails. He checked his speed, but soon the other engine passing him, explained the red appearance, and he went on. He had got within 200 yards of the north mouth of the tunnel when he felt a slight concussion, but still went on, got clear of the tunnel, and reached the points of the Walton junction, where he passed on to the East Lancashire line. Here he was stopped as before described, by the guard, who saw that part of the train had been left behind.

Though unable to obtain the evidence of the driver and fireman of this train, I still have not the slightest doubt that the following is a correct solution of the cause of the red light which

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they mistook for a danger-signal. The engine they saw approaching on the opposite line of rails belonged to a goods-train of the Yorkshire and Lancashire Company, and the gauge-lamp used by the Lancashire and Yorkshire Company to enable the driver to read the gauge showing the quantity of water in the boiler, is made to show a light on all four sides—a white light a-head, where it falls upon the gauge, a green light behind, and a red light on either side. This is done to render the lamp, on being detached, generally useful; but when fixed on the engine the red light on either side is not shaded in any way, and I am opinion that it was the reflection of this red light from the sides of the tunnel that deceived these men into the belief that a danger-signal was shown.

The goods-train which followed the East Lancashire passenger-train from Liverpool belonged to the Lancashire and Yorkshire Company. It left Liverpool 5 minutes after that passenger-train, and was delayed 4 minutes more at the goods depôt, which is situated half-way between Liverpool and Bootle. Being a very light train, however, consisting of only an engine and tender, two empty coke-waggons and a van, it reached the Bootle station only 3½ minutes after the passenger-train had left it. The goods-train had no occasion to stop at Bootle; and I have already stated my opinion that no signal whatever was shown from that station to stop the driver or warn him that the passenger-train was such a short distance a-head. He, therefore, passed on at his usual speed, and whistled loudly on entering the tunnel. As the passenger-engine a-head of him, however, and the goods-engine on the other line were sounding the whistles at the same time, this signal, in the confusion of sounds does not appear to have been of any use.

Thinking that all was clear before him, the driver went on, till within a couple of hundred yards from the northern extremity of the tunnel, he suddenly saw the reflection of the light of his own fire cast back from a carriage some 20 yards a-head. He tried to stop, but there was no time, and he ran into the passenger-train. The difference of speed at the moment of collision could not have been great, for the shock was scarcely felt by the men on the engines, and the guard of the goods-train was not even aware that a collision had occurred, the parties who suffered were the passengers in the carriages, three of whom, who were sitting in a coupé, were thrown with such force against the plate-glass that their heads went through, and their faces and necks were much cut.

The first question that naturally suggests itself at this point is, how was it that the driver did not see the red tail-lamps of the passenger-train? The answer appears to me an extraordinary one. The East Lancashire trains, though they pass through this long tunnel, were not, up to the time of this collision, provided with tail-lamps by day. Now, I understand they are always used. It is scarcely necessary to remark, that they should never have been omitted.

On first seeing the carriage a-head, the driver of the goods-train had proceeded to stop his train, and the shock of the collision to him appears to have been so slight, owing to the great weight of the engine, that he was not aware that any damage had been done to the preceding train. After a momentary panic, seeing that the carriages in front of him had gone on, and knowing that a pilot-engine was following him which would again be followed by the 8·20 Lancashire and Yorkshire passenger-train from Liverpool, the driver proceeded slowly to the junction where he arrived shortly after the detached carriages had run against the buffers of the first part of the passenger-train.

At first sight it appears unfortunate that the first part of the passenger-train was stopped so as to be run into by the detached carriages, yet it is very questionable whether if these carriages had not been thus stopped a more serious calamity might not have happened; for an East Lancashire goods-train happened to be passing from its own line on to the up-line of the joint portion just at that moment, and the driver of it had been compelled to pull up, by the circumstance, that a passenger in one of the two carriages that had followed the passenger-engine, frightened by the collision in the tunnel, and dreading something more, had thrown himself out of the carriage while the train was still in motion, and lay senseless and stunned on the opposite line. Had that goods-train not stopped at once, the engine must have passed over this passenger, and had not the detached carriages been stopped by the buffers of the preceding part of their own train, they would have come in contact with the goods-train at a very oblique angle, and might have been thrown off the line and probably upset.

On inquiring how it came to pass that the three last carriages of the East Lancashire train became detached by a shock that does not appear to have been very severe, and questioning the servants of that Company as to whether there was not something peculiar in the couplings of the carriage that was cast loose, I learn that the East Lancashire Company's store-room at Liverpool has not always been provided with proper screw couplings, and that when one breaks and there are none in store, the practice is to use a chain such as goods-trucks are coupled with, and to endeavour by running the carriages together, to get this on so tight that it may answer the purpose. I have every reason to believe that the carriage that broke loose was coupled in this way, and I need scarcely remark, that it was a very imperfect coupling.

On reviewing all the circumstances attending these collisions, I am of opinion that the second was in a great measure due to the imperfect coupling of the East Lancashire train, and that the first may be ascribed to the following causes:—

1st. To the laxity with which the duties at the Bootle station appear to have been conducted, and the consequent neglect to give proper signals on the arrival and after the starting of the passenger-train. The station-master was absent from his duty; the signal-man had not yet come; the Lancashire and Yorkshire ticket-collector was doing the station-master's duty in the ticket-office; and the East Lancashire ticket-collector appears to think it no part of his duty to attend to signals, and attends to them or not as he feels inclined.

2nd. To the want of tail-lamps to the East Lancashire passenger-train. This appears to me to have been a most improper omission.

3rd. Though in a far minor degree to the unfortunate circumstance of the reflection of the red light from the Lancashire and Yorkshire gauge-lamp being mistaken for a danger-signal,—

I would recommend that the attention of the joint manager be directed to the laxity of discipline and want of definite instruction to the several servants at the Bootle station, with a view to its being amended. I would further recommend that proper care be taken to keep the Liverpool store-room better supplied than it has been of late; that the East Lancashire trains be never again allowed to pass through a tunnel without tail-lamps; and finally, that the Lancashire and Yorkshire Company be requested to provide some means of shading the red lights of the gauge-lamps upon their engines, to prevent the recurrence of a mistake so natural as that made by the driver of this passenger-train.

I have, &c.,

R. M. LAFFAN,
Capt. Royal Engineers.

Capt. Harness, R.E.,
&c. &c.

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Office of Commissioners of Railways, Whitehall,
December 13, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of a report made to them by Captain Laffan, on the collision which occurred on the 26th ultimo, upon that portion of railway by which the lines of the Lancashire and Yorkshire and the East Lancashire Railway Companies are connected with their joint terminus at Liverpool, and to express the hope of the Commissioners that the arrangements of the Bootle station will receive the immediate attention of the two Companies interested, and that by their mutual co-operation, the laxity which Captain Laffan considers to have been one of the principal causes of the accident, may be effectually prevented for the future.

I am also to request you to call the particular attention of the Directors of the Company to those parts of the report which apply to the arrangements of the East Lancashire Railway Company.

I have, &c.,

H. D. HARNESS,
Capt. Royal Engineers.

To the Secretary of the
East Lancashire Railway Company.

APPENDIX No. 65.

Appendix No. 65.

London and North
Western Railway.

LONDON AND NORTH WESTERN RAILWAY COMPANY.

Office of Commissioners of Railways, Whitehall,
August 13, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letters of the 10th instant, on the subject of the recent collision near Warrington, and to request you to forward a copy of the regulations by which the number of breaksmen allotted to goods trains, and the speed of such trains, are determined, that they may be referred to the officer who has been appointed to inquire into the circumstances attending the accident above referred to.

I have, &c.,

The Secretary of the
London and North Western Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

General Manager's Office, Euston Station,
August 16, 1849.

SIR,

I AM instructed to answer your letter of the 13th, and to state that there are no specific regulations in regard to the number of breaksmen with a train, which depends not upon the number of waggons that are in a train, but upon the number of *road-side* waggons to be detached on the journey.

With reference to the speed of the goods trains, I have the honour to enclose a time-bill, which will give you every information.

I may add that, since writing, the Directors have met, and taken a mass of evidence upon the subject; the result of the investigation has satisfied them that the accident was one which did not arise from carelessness on the part of any one, but was the result of a combination of unfortunate contingencies.

I have, &c.,

MARK HUISH.

Capt. Harness, R.E.,
&c. &c.

Appendix No. 65.

London and North
Western Railway.

SIR,

Office of Commissioners of Railways, Whitehall,
December 11, 1849.

I HAVE the honour to lay before you, for the information of the Commissioners, the result of my inquiries into the circumstances attending a collision which occurred upon the up-line of the London and North Western Railway, about half-way between the Newton junction and Warrington at half-past four in the afternoon of the 6th August last; and at the same time, I beg to submit to you some considerations upon the amount of braking power allowed to passenger and goods trains, with reference to the distances within which the rules now in force upon the London and North Western Railway require that those trains should be able to stop when running at the ordinary speed.

This report has been delayed up to the present time by the necessity of determining from actual experiment the values to be ascribed to the various appliances now in use for stopping trains, and by the numerous other duties to which my attention has in the mean time been directed.

The spot where the accident now under consideration occurred, is about two miles south of the Newton junction, where the London and North Western line, proceeding south, leaves the Liverpool and Manchester line. The junction is a double one, and from the point of meeting at the curves which form it, the line descends for a mile and a quarter a steep incline, varying from 1 in 87½ at top to 1 in 85 at bottom; thence, for 300 yards, the descent varies from 1 in 457½ to a level line, which level is then continued for some distance. From the foot of the incline the line sweeps round to the left on a curve of wide radius, departing sufficiently, however, from a straight direction to prevent a driver from seeing the rails for any considerable distance a-head. The rules direct, that no train going south shall be allowed to pass the points at the head of the incline till five minutes have elapsed after the preceding train has passed.

The collision occurred in consequence of a mixed train of passengers and goods having stopped upon the level line beyond the incline, to set right a large package that had got loose in one of the waggons. It had scarcely been stopped two minutes when it was run into by a goods train which had followed it down the incline at the prescribed interval of five minutes, and which was unable to stop within the distance to which the parties in charge of the mixed train had had time to send back a danger-signal.

The mixed train consisted of an engine and tender and six loaded waggons, behind which were attached two passenger carriages.

The waggons had come from the St. Helen's Railway, which joins the Liverpool and Manchester line about three miles west of Newton junction.

This train got safely down the incline, but on reaching the gentler gradient beyond it, the driver, looking back as is customary at this point, to see whether all the couplings held good, perceived that a large packet of plate-glass, 12 feet by 10 feet, and only 1 foot thick, which had been placed upright on its edge in one of the waggons, was rocking from side to side, and presently he saw it fall over, resting against the sides of the waggon, and projecting four or five feet from the line of the train, and threatening every instant to fall out. In this position it would have come in contact with the masonry of the first bridge it passed under; and there was besides a great danger that, if this large package, weighing, as I am informed, two tons, fell out, it would throw some of the waggons off the line, and possibly throw them on to and block up the down-line at a moment when the down mail train was due.

Seeing these contingencies, the driver resolved to stop his train in order to set this package right, and he stopped accordingly at a level crossing about half a mile from the foot of the incline.

The gatekeeper at the level crossing had seen that the approaching train was about to stop, and receiving a sign from a foreman of platelayers, who happened to be with the driver upon the engine, he ran back as fast as he could, even before the train had stopped, to give the danger-signal to any engine that might be following; yet, notwithstanding the fortunate circumstance that this man, being unconnected with the train, was enabled to run back even before it had stopped, he had only got back 350 yards when the goods train which followed came up and passed him.

When the mixed train had been brought to a stand, the fireman and guard, assisted by the foreman of platelayers, proceeded at once to the waggon where the package of plate-glass had got loose, and were commencing to set it right, when they heard the whistle of an engine approaching behind them. They called to the driver to move on, and he did so, but *only one waggon followed his engine*. The check of pulling-up suddenly had detached the couplings of the first and second waggons, and the body of the train was thus left behind. Seeing then that a collision was inevitable, the guard and fireman endeavoured to get all the passengers out of the two carriages, and they had succeeded in getting all out, with the exception of those in one of the compartments of the last carriage, when the goods train came up and destroyed that carriage, injuring very severely the passengers it still contained.

The goods train consisted of an engine and tender, 23 loaded and 4 empty waggons, and a break-van. It followed the other down the incline at the prescribed interval of five minutes, but being a heavier train, and one entirely composed of goods waggons, it was not so easily handled as the lighter train in front. It appears to have acquired a somewhat greater velocity in descending the incline, and on reaching the gentler gradient beyond it, the driver appears to have put on his steam more promptly, to prevent the load behind, which still felt the influence of the incline, from overrunning him. He had got his train safely off the incline, and was running on the curve of the gentler gradient beyond, when he saw over the hedges in front the steam of an engine, which, by the way it ascended, led him to suppose that that engine was standing still; he could not see upon which line it stood, but he immediately shut

off his own steam, and shortly after, seeing the gatekeeper running towards him waving a flag, he reversed his engine, and blew the whistle loudly, while the fireman and guard applied their breaks.

It was too late, however, the distance was too short to stop such a heavy train at the velocity at which it had come off the steep incline, and notwithstanding every effort, the engine ran into the last carriage of the mixed train, and broke it to pieces, itself being lifted from the line and left resting upon the hind wheels of the carriage it had destroyed.

On inquiring particularly as to the manner in which the packet of plate-glass had been secured in the waggon, I find that *no precautions whatever* had been taken to secure it: a package of plate-glass 12 feet long and standing 10 feet high, and weighing two tons, had been set up, standing upon a base only one foot wide, and two ends of waggons had been placed leaning against it, one from either side, without either nails, or cords, or any other contrivance to keep it in place; the jolting of the waggon in descending the incline had thrown down the waggon ends, and set the package rocking from side to side, and the oscillations increased till at length it fell over.

This waggon had been packed by the St. Helen's Company, from whose line it came. No inspection of the waggon was made on its coming on to the London and North Western line, beyond seeing that it was properly coupled. The London and North Western Company's rules direct, that the breaksmen of a goods train shall always inspect the packing of the goods before starting, and the guard or breaksmen, in this instance, appears to have neglected his duty.

The coupling-chains of the first and second waggon of the mixed train which became detached when that train was stopped, were found uninjured on a subsequent inspection. The sudden check had thrown one of the hooks out of the eye-bolt, and there was then nothing to hold the train together. *This is a contingency that happens every day to a goods train when suddenly pulled up.*

On reviewing all the circumstances attending this collision, it is impossible not to be struck with the conviction, that the interval (five minutes) allowed between two trains descending the the Newton incline is *insufficient*. Here we have two trains following one another at the prescribed interval: the first train, on being compelled to stop, has the unusual advantage of being able to send a signal-man back, even before it has come to a stand, and the parties in charge of the second apply the whole breaking power at their disposal; yet, notwithstanding this good guidance, aided by good fortune, the interval proves insufficient, and a collision is the result.

I attribute this disaster to the following cause:—

1. The insufficiency of the interval allowed between two trains descending the Newton Incline.
2. The *gross neglect* of the servants of the St. Helen's Railway Company, in sending off a waggon containing a large and very heavy package, placed in a *most insecure* position, without the slightest precaution to keep it in place.
3. The *neglect* of the London and North Western Railway Company's breaksmen, in not inspecting the loading of his waggons before starting, to see that they were properly packed.
4. The *absence* of any definite instructions in the London and North Western Company's printed regulations, prescribing that a *careful inspection shall be made* of all waggons coming from other lines, before allowing them on to the London and North Western Railway.
5. The imperfect way in which goods waggons are generally coupled together, causing in this instance the separation of the mixed train into two parts, by the failure of one of the couplings. Had it not been for this circumstance, it appears *probable* that the driver of the mixed train might have moved on with all his waggons and carriages on seeing the other train approaching, and thereby averted this disaster.

In connexion with the last-named cause, I beg to suggest how dangerous is the practice of mixing goods waggons, imperfectly coupled together, with passenger carriages, on a line where the traffic is so great as on the London and North Western Railway.

I would recommend that the interval of five minutes between trains descending the Newton incline be *increased*. The narrative of the present disaster shows that it is insufficient. I would also recommend that definite instructions be issued by the London and North Western Railway Company, directing the nature of the inspection to which goods trains coming from other railways shall be subjected prior to their being received upon the London and North Western lines. Finally, I think it desirable to suggest to the London and North Western Company that the practice of mixing passenger carriages with goods waggons, which are unprovided with spring draw-bars and spring buffers, and which are imperfectly coupled together by means of a single chain, is one that should be discontinued.

The risk arising to railway traffic generally, from the present construction and mode of coupling of the waggons composing goods trains, appears to me to be a subject of so much importance that I propose to reserve it for a separate paper. In this report I would merely state my opinion—"that on a line where there is a considerable traffic, and where numerous goods trains are running during the intervals between the passenger trains, it is very desirable that the waggons composing such goods trains should be provided both with spring draw-bars and spring buffers."

I have reserved the question, whether the amount of breaking power placed at the disposal of the parties in charge of the goods train was sufficient, or the reverse, because that question

Appendix No. 65. appears to me to merge in the more general one which embraces the subject of breaking power in connexion with the weight and speed of trains, and with the rules by which the London and North Western Railway.

It is evident that the proportion which should exist between the breaking power and the total weight of the trains must depend upon the speed at which those trains usually run, and upon the distances within which the Company's regulations require that they should always be able to stop, on receiving intimation of danger.

The London and North Western Company's printed regulations direct:—

(Rule 11, page 62), That on the arrival of a train at a station, the red signal shall be shown, and continued for five minutes after its departure.

(Rule 23, page 19), That there shall be an interval of not less than five minutes between any two trains descending the Newton incline towards Warrington.

(Rule 2, page 26), That in foggy weather, fog signals shall be placed on the rails for 600 yards behind any train that has come to a stand.

(Rule 2, page 17), that engines travelling on the same line shall keep 800 yards, at least, apart from each other.

From these rules I draw the conclusion that the Company's officers consider five minutes a sufficient interval of time to allow at stations between trains travelling upon the same line; that they consider 800 yards a sufficient interval of distance between such trains at intermediate points; and that they are of opinion that 600 yards give sufficient space to enable any train to stop on perceiving a danger-signal.

In order to form an opinion as to the sufficiency of these intervals of time and of distance, it is necessary to ascertain:—

1. The weight of ordinary goods and passenger trains upon the London and North Western line.
2. The usual speed of such trains.
3. The amount of breaking power usually placed at the disposal of the parties in charge of the trains. And,
4. The intervals both of time and of distance within which such trains can be stopped.

The rules of the London and North Western Company direct, that goods trains shall not consist of more than 40 loaded waggons; and they provide, that one break-van shall be attached to each goods train. The time-bills for goods trains show, that they run at the rate of 25 miles an hour. A goods train I therefore take to be composed as follows:—

	Tons.		Tons.
Engine weighs	18	Weight upon four driving wheels	12
Tender	10	All wheels locked by breaks	10
One break-van	3½	Ditto ditto ditto	3½
40 loaded waggons	240		
Total weighed	271½	Total weight on the wheels that	are locked or retarded } 25½
Speed, 36½ feet per second.			

An ordinary passenger train I assume to be composed of an engine and tender, two break-vans, and 14 carriages: and for the speed, I take the not unusual rate of 45 miles an hour. Such a train would be composed as follows:—

	Tons.		Tons.
Engine weighs	18	Weight on driving-wheels	9
Tender	10	All wheels locked	10
Two vans	9	Ditto ditto	9
Fourteen carriages	70		
Total weight	107	Total weight on the wheels that	are locked or retarded. } 28
Speed, 66 feet per second.			

There remains to see within what intervals, both of time and of distance, the trains above described can be stopped when travelling at their usual speeds of 25 and 45 miles an hour.

In order to determine this question, I have made some experiments, which, though not so extensive as I would wish, appear to me to be sufficient for the present purpose. The results I give with considerable confidence, for both in making the experiments, and in the subsequent comparisons and calculations for reducing them I had the great advantage of being most kindly assisted by my valued friend and instructor Professor Barlow, to whose well-known experience and skill I beg to acknowledge my obligations.

The object of the experiments was to ascertain, first, the amount of retardation due to axle-friction, and other ordinary causes of resistance to the movements of trains, and next, the value to be ascribed to the action of the various breaks, and to the retarded movement of the engine when the gearing was reversed.

The experiments were made with a train composed of an engine and tender, 19 loaded waggons, 1 first-class carriage, and 2 break-vans, running at speeds varying from 20 to 30 miles an hour, over a line perfectly level and straight. The formulæ deduced from such experiments, therefore, cannot be said strictly to apply to any other than trains similarly circumstanced; but, in the first place, the action of inclined planes is so well understood, that I feel no hesitation in adding to the formulæ for a level line the expressions representing the influence of adverse and favourable gradients; and secondly, I am led to believe from my own experience that these formulæ, for speeds of between 20 and 30 miles an hour, will give a very near approximation when applied to the higher speeds of passenger trains.

The following are the formulæ resulting from these experiments:—

- Let R represent the retardation or destruction of velocity, estimated in feet per second, resulting from all causes, whether the ordinary resistances, or the action of a reversed engine, or of the various breaks;
 V the velocity, also estimated in feet per second, at which the train is running when the steam is shut off;
 W the whole weight of the train, engine and tender included;
 w that portion of the total weight of the train which rests upon wheels that are locked by the action of the breaks, including the weight upon the driving wheels when the engine is reversed;
 B the base of the slope (when on a gradient) which gives a rise or fall of one foot;
 G the uniform accelerating or retarding force of gravity = $32 \cdot 16$ feet per second.
 D the distance within which the train can be stopped; and
 T the time consumed in stopping.

Then upon a level line, with steam shut off and no breaks applied,

$$R = \left(\frac{W}{334} \right) \frac{G}{W} = \frac{G}{334} = \cdot 0963 \text{ feet per second;}$$

and when the breaking power is applied,

$$R = \left(\frac{W}{334} + \frac{w}{7} \right) \frac{G}{W} = \cdot 0963 + \frac{4 \cdot 594 w}{W};$$

and upon an ascending or descending gradient, when the steam is shut off and no breaking power applied,

$$R = \left(\frac{W}{334} \pm \frac{W}{B} \right) \frac{G}{W} = \cdot 0963 \pm \frac{32 \cdot 16}{B},$$

and when breaking power is applied,

$$R = \left(\frac{W}{334} + \frac{w}{7} \pm \frac{W}{B} \right) \frac{G}{W} = \cdot 0963 + \frac{4 \cdot 594 w}{W} \pm \frac{32 \cdot 16}{B},$$

using the expression $+$ on an ascending, and $-$ on a descending gradient. And in all cases,

$$D = 10 V + \frac{V^2}{2 R}, \text{ and } T = 10 + \frac{V}{R},$$

assuming, as I do from experience, that 10 seconds are lost before the breaking power can be applied.

Applying these formulæ to the trains previously described, we have for the goods train,

$$\begin{aligned} W &= 271\frac{1}{2} \text{ tons,} \\ w &= 25\frac{1}{2} \text{ tons,} \\ V &= 36 \cdot 666 \text{ feet per second.} \end{aligned}$$

Then upon a level line,

$$R = \cdot 0963 + \frac{4 \cdot 594 \times 25 \cdot 5}{271 \cdot 5} = \cdot 5278 \text{ feet per second;}$$

and on a gradient descending 1 in 150,

$$R = \cdot 0963 + \frac{4 \cdot 594 \times 25 \cdot 5}{271 \cdot 5} - \frac{32 \cdot 16}{150} = \cdot 3134 \text{ feet per second;}$$

and on the level line,

$$D = 10 \times 36 \cdot 666 + \frac{36 \cdot 666^2}{\cdot 5278 \times 2} = 1640 \text{ feet, or } 546\frac{1}{2} \text{ yards;}$$

$$\text{and } T = 10 + \frac{V}{R} = 10 + \frac{36 \cdot 666}{\cdot 5278} = 79 \cdot 47 \text{ seconds;}$$

and on a gradient descending 1 in 150,

$$D = 10 \times 36 \cdot 666 + \frac{36 \cdot 666^2}{\cdot 3134 \times 2} = 2511 \text{ feet, or } 837 \text{ yards;}$$

$$\text{and } T = 10 + \frac{36 \cdot 666}{\cdot 3134} = 127 \text{ seconds.}$$

Next, for the passenger train we have,

$$W = 107 \left. \begin{array}{l} \text{then } R = \cdot 0963 + \frac{4 \cdot 594 \times 28}{107} = 1 \cdot 2985 \text{ feet per second;} \\ w = 28 \end{array} \right\} \text{ and } D = 10 \times 66 + \frac{66^2}{1 \cdot 2985 \times 2} = 2337 \text{ feet, or } 779 \text{ yards;}$$

$$V = 66 \left. \begin{array}{l} \text{and } T = 10 + \frac{66}{1 \cdot 2985} = 60 \cdot 8 \text{ seconds, upon a level line;} \\ \end{array} \right\}$$

and upon a gradient descending 1 in 150, we find,

$$R = 1 \cdot 2985 - \frac{32 \cdot 16}{150} = 1 \cdot 0841 \text{ feet per second;}$$

$$\text{and } D = 10 \times 66 + \frac{66^2}{1 \cdot 0841 \times 2} = 2669 \text{ feet, or } 889\frac{1}{2} \text{ yards;}$$

$$\text{and } T = 10 + \frac{66}{1 \cdot 0841} = 70 \cdot 8 \text{ seconds.}$$

From this it appears that an ordinary goods train, proceeding at its usual speed of 25 miles

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Western Railway.

an hour, requires a distance of 546½ yards, and 79·47 seconds of time to enable it to come to a stand upon a level line, and that the distance is increased to 837 yards, and the time to 127 seconds, upon a gradient descending 1 in 150. It also appears, that an ordinary passenger train, travelling at the not unusual speed of 45 miles an hour, requires 779 yards, and 60·8 seconds, upon a level line, and 889½ yards, and 70·8 seconds upon the descent of 1 in 150.

To provide, then, for the safety of public traffic, it appears that the distance (600 yards) to which danger-signals are directed to be sent back, should be considerably increased, unless it be thought more expedient to augment the breaking power attached to the trains.

On applying the conclusions arrived at from the preceding experiments to the circumstances of a goods train travelling at the rate of 25 miles an hour, and requiring to stop when followed upon the same line by a passenger train travelling at the rate of 45 miles an hour, it will be seen that in foggy weather, in order to provide a sufficient security against the chances of a collision, it would be necessary, with the present breaking power, that upon a level line the passenger train should be at least 7¼ minutes in point of time, or 5½ miles in distance behind the goods train, and that, upon a gradient descending 1 in 150, those intervals should be increased to 8 minutes and 52 seconds of time, and nearly 6½ miles in distance.

It will also be seen that in fine weather, when we may suppose that the signal might be observed 300 yards off, the intervals between the same trains should not be less than 4¼ minutes, or 3¼ miles, upon a level line, and 5 minutes and 43 seconds, or 4¼ miles, upon a gradient descending 1 in 150.

If the above, then, be the intervals which should exist between a passenger and a goods train, upon all parts of the line whereon such trains run at the speeds described, it appears evident that the intervals at which such trains are allowed to pass intermediate stations should be considerably greater, to allow for the faster gaining upon the slower train.

On reviewing all the circumstances of this collision, and comparing the present rules of the London and North Western Company with the results deduced from the experiments referred to above, I am of opinion, that to provide adequately for the safety of the public traffic, it is desirable that the London and North Western Company adopts one or other of the following courses:—

1. Either to reduce considerably the speed both of passenger and goods trains,
2. Or augment the intervals, both of time and distance, prescribed between trains travelling upon the same line;
3. Or lastly, augment considerably the proportion of breaking power attached to all trains.

The last alternative appears to me to be the most desirable, and the easiest to accomplish.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
December 31, 1849.

SIR,

I HAVE the honour to lay before you, for the information of the Commissioners, the result of my inquiries into the circumstances attending a collision which occurred near the foot of the Whiston incline, upon the down line of the Liverpool and Manchester section of the London and North Western Railway, at half-past five P.M., on the afternoon of the 14th ultimo.

On the Whiston incline, the down line of the London and North Western Railway descends for a considerable distance at a gradient of 1 in 97; then for 180 yards further, descends, at the rate of 1 in 244; and from that, the lowest point, again rises for 450 yards at the gentle ascent of 1 in 1,521; and for a considerable distance further, at an ascent of 1 in 1,102. At the end of the ascent of 1 in 1,521; and 630 yards from the foot of the steep incline, is situated the Whiston or Rainhill station.

The accident occurred in consequence of a heavy train of empty cattle-waggons having been suddenly checked when descending the steep incline, on the driver perceiving a danger-signal at the Rainhill station, and of the coupling-chain of one of the waggons having become unhooked by the sudden jerk. Before matters could be set right, the train was run into by a passenger train which followed it down the incline, and which was itself followed at rather short intervals apart by a goods train and two express trains, all moving together down the incline upon the same line of rails.

The printed rules of the London and North Western Company direct that, on the Liverpool and Manchester line, a red signal shall be shown for three minutes, and a green signal for five minutes more after a stopping train, or one proceeding slowly has passed an intermediate station; the former to stop, and the latter to caution, the driver of any engine following upon the same line.

The interval of three minutes is not a great one to allow between trains passing a station upon the same line; yet, in practice, I am informed that even that brief interval is not enforced. The traffic upon this part of the London and North Western line is, I learn, so great at particular hours of the day, that it is thought better to allow each train to proceed after cautioning the driver, and telling him how far the preceding train is ahead. On this he proceeds till he gets sight of the train in front; when he follows it at an interval of from 600 to 800 yards.

It is needless to observe, that the rule I have quoted is of no value, and that the traffic is exposed to a great and constant risk, when such a custom as this is allowed to prevail.

In another place, the rules of the London and North Western Company direct that no engine, whether with passengers or goods, shall descend the Whiston incline at a greater speed than 30 miles an hour; but I am not inclined to attach much value to this regulation, for I have rarely met with an engine-driver who could form anything like a correct estimate of the speed he might be running at at any particular time. I have frequently, when travelling upon engines, questioned the drivers as to the speed, and told them to take a little time, and consider well their answers; and those answers I have compared with the correct rates deduced from timing the quarter-mile posts. In the great majority of instances I have found that the drivers materially under-rated the speed.

The empty waggon-train consisted of two engines and tenders, 58 empty cattle-waggons, and two break-vans. The parties in charge of it consisted of two drivers, two firemen, and two guards; the latter, as is the custom upon the London and North Western line, riding together in the last break-van, so that only one was available to apply a break.

Five hundred and ninety yards before reaching the foot of the Whiston incline, and 1,220 yards from the Rainhill station, trains proceeding towards Liverpool pass under a long narrow bridge, called Platt's-bridge; on emerging from which such trains first get sight of the signals at the Rainhill station. On this occasion those signals showed a red light, and the driver of the leading engine of the empty waggon-train, on perceiving it, gave the signal to stop the train.

The cause of the red light being shown at the Rainhill station was, that a pilot-engine was engaged there then, shifting some waggons from the sidings, and that the down-line was consequently blocked for a time.

The empty waggon-train had materially checked its speed, when the line through the station being again cleared, the red signal was taken off, and a white or "all right" signal shown. The drivers of the waggon-train immediately put on steam to proceed; but the previous sudden check had caused the waggons to run together, and one of the hooks of the chain which connected the 21st and 22nd waggon had been cast loose by the sudden shock. As the engines proceeded, therefore, at an increased speed, only 21 waggons followed them, while the remaining 38 continued to roll on at their previous rate (about six miles an hour).

The drivers soon felt, by the diminished pull upon the engine, that a considerable portion of the train had been left behind; but they dared not stop at once lest the detached portion which they knew to be still advancing—should run into the waggons that had followed the engines, and throw some of them off the line. They went on nearly half a mile, then stopped; and presently, receiving a signal from a policeman at the station, came back to meet the detached waggons which were still moving at the rate of some four miles an hour. These two portions of the train met about 150 yards up the ascending gradient of 1 in 450; and as nearly as possible at the same instant a passenger-train from Preston, which appears to have come down the incline at a high speed, dashed into the break-van behind, as it had nearly reached the end of the descending gradient of 1 in 244, which succeeds to the steep incline.

The breaks-men of the empty waggon-train had applied the break of the van in which they rode on hearing the whistle on the incline, and had taken it off again on seeing the red signal turned off; but soon they perceived that the engines were leaving them, and that some of the couplings must have got loose. The break was again applied to check the speed of the detached waggons, and prevent their running too violently against the preceding ones, in case the engines were stopped too soon; but the van being empty and light, weighing, as I am informed, only 2 tons 11 cwt., the break had very little power over such a number of waggons on so steep an incline; meantime the second breaks-man had thrown himself from the van, and ran forward to endeavour to reach the leading waggon, and signal to the engines when to come back; and as soon as the break had been turned tight, the first breaks-man threw himself out also, to run back and give a danger-signal to any following train.

The first breaks-man had scarcely recovered from the shock of his fall, and the second had not yet quite reached the leading waggon, when the passenger-engine dashed into the break-van in rear, at the same time that the returning waggons, pushed back by the engines, came in contact with the detached waggons in front. The double shock caused the collision to be a severe one; the van in rear was completely smashed, and four or five of the waggons next it were very much injured and thrown off the line; while three or four more were also injured, and thrown off at the place where the two detached portions of the waggon-train met.

The passenger-train, consisting of an engine and tender and one van, followed by six passenger-carriages, had left Preston at 15 minutes past four, and was running down the Whiston incline at a higher speed than the prescribed rate of 30 miles an hour; when, about 100 yards after emerging from the narrow bridge called Platt's-bridge, the driver saw the red lights of a train that appeared to be moving slowly in front of him upon the same line. He states, that he immediately reversed his engine, and blew the whistle, for the fireman and guard to apply their breaks; and his statement is borne out by the evidence of the fireman and guard, who state that they heard the whistle at the place stated by the driver, and that they at once applied their breaks. Nevertheless, the engine appears to have been still moving at the rate of some 10 miles an hour when it ran into the waggon-train, 600 yards from the place where the red lights were first seen. Its speed, when those lights were first seen, I estimate at from 40 to 42 miles an hour.

The engine of the passenger-train had its chimney knocked off, and was thrown off the line; it sustained, however, no further injury, neither the van nor the six carriages in rear

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of it were injured; and the passengers escaped with a few bruises and a rough shock. It was a fortunate escape.

The first breaks-man of the empty waggon-train had been unable to run back to stop the passenger-train, for he had only just recovered from the shock of his fall, when the passenger-engine ran into his van. After seeing the collision, he at once ran back, and proceeded as far as the head of the incline, and in that distance stopped first, a goods-train next the express from Manchester to Liverpool; and next, the express from Preston and the north to Liverpool; the latter of which was just coming on to the head of the incline. Here he left directions with the policeman not to allow any more trains to come on, and then returned in all haste to rejoin his own train. I think it very probable that, with trains following each other so closely, if this man had not run back to such a distance as he did, telling each train to stop, a second disaster would have occurred.

On reviewing all the circumstances attending this collision, I am inclined to attribute its occurrence to the following causes:—

1st. The custom of allowing trains to follow each other so closely as appears to be now the practice upon the Liverpool and Manchester line. I am of opinion that even the interval of three minutes prescribed by the London and North Western Company's rules is far from being sufficient to provide for the public safety; and here we have a custom which neglects even that slight precaution.

2nd. The faulty construction, and consequently insecure method of coupling the 21st and 22nd waggons which formed part of the empty waggon-train. Of the 59 waggons which composed that train, 30 came from the London and Birmingham section of the London and North Western Railway; 19 from the Grand Junction section, and the remaining 10 belonged to the South Staffordshire line. The first were provided with spring draw-bars and spring buffers. The Grand Junction waggons, as far as I can learn, were also similarly provided; the South Staffordshire waggons had elastic India-rubber buffers, but the more important spring draw-bar was wanting. It was between two of these last that the coupling-chain became unlocked.

3rd. The last cause of this collision was undoubtedly the high speed, higher than is allowed by the London and North Western Company's rules, at which the passenger-train was running down the incline; but I am not disposed to attach much blame to the driver of that train, for as I have said before, my own experience leads me to doubt the ability of engine-drivers generally to estimate correctly the speed at which they run, and on this occasion it was nearly dusk and raining heavily, so that the man could not see the quarter mile-posts.

I would recommend that the London and North Western Company either augment considerably the breaking power attached to their trains, or that they increase the interval of three minutes which their present rules prescribe between trains passing the several intermediate stations on the Liverpool and Manchester line; and whatever be the interval prescribed, I am of opinion that it should be strictly enforced; the present objectionable practice of disregarding the rule, and allowing trains to pass at very short intervals with a single caution to the driver, should be discontinued. It is evident that when trains follow one another so closely, should an accident occur, to stop or even retard one, it is very difficult to avert a collision.

I am aware that this latter recommendation, if followed out, will materially affect the management of the traffic upon the Liverpool and Manchester line. The Company's engineer and superintendent at Warrington has represented to me that the trains are at times so numerous that the strict enforcement of the proper interval between them would greatly derange the whole traffic, and cause delays that might endanger the public safety, almost as much as the present practice; but it appears to me that such inconvenience might be averted by a better distribution of the times of arrival and departure; and if the traffic be indeed so great that the danger now undoubtedly existing cannot be lessened by such new arrangement, then it appears to me that the time has arrived when the Directors should consider seriously the question, whether it would not be advisable to provide additional lines to separate the goods from the passenger-train.

The question referring to the mode of coupling together the waggons composing goods-trains is one to which I have adverted in a former report. It appears to me to be so important that I propose to make it the subject of a separate paper.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

SIR,

Office of Commissioners of Railways, Whitehall,
December 31, 1849.

I HAVE been directed by the Commissioners of Railways to inform you that they have received a report from Captain Laffan on the circumstances attending the collision which occurred on the afternoon of the 6th August last, on that part of the London and North Western Railway known as the Newton junction and Warrington, one cause of which appears to have been that a large package of plate-glass, in a waggon which had come with others from the St. Helen's Railway, had been insufficiently secure; and that Captain Laffan, in stating the different causes which by their combination occasioned the accident, thus alludes to the causes above mentioned:—

"2ndly. The gross neglect of the servants of the St. Helen's Railway Company, in sending off a waggon containing a large and very heavy package, placed in a most insecure position, without the slightest precaution to keep it in place."

The Commissioners hope that the Directors of the Company will take such steps as will prevent the recurrence of a similar neglect.

I have, &c.,

*The Secretary of the
St. Helen's Railway and Canal Company.*

H. D. HARNESS,
Capt. Royal Engineers.

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*Office of Commissioners of Railway, Whitehall,
January 2, 1850.*

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the report made to them by Captain Laffan, on the circumstance attending the collision which occurred between the Newton junction and Warrington, on the afternoon of the 6th of August, as many of the observations contained in that report appear to deserve the serious consideration of the Directors of the London and North Western Railway Company.

The primary cause of the accident referred to, was the insufficient manner in which a large package of plate-glass was secured to the waggon on which it was being conveyed; and Captain Laffan attributes great neglect to the servants of the St. Helen's Railway Company from whose line the loaded waggon had been received, and a communication has consequently been addressed to that Company; but it will be observed, that he also considers that a more careful inspection of this waggon should have been made by the servants of the London and North Western Railway Company on receiving it; and that he remarks upon the absence of any definite instructions with respect to such inspection from the printed regulations of the Company.

Another circumstance to which Captain Laffan attributes an important share in producing the accident, is the insufficiency of the interval allowed between trains descending the Newton incline. It appears from his report, that although that interval had been observed, although the engine-driver of the leading train had been enabled to send back a gate-keeper on the line with a signal before the train was completely stopped; and although the driver of the following train had observed that another train was standing on the line, and had shut off his steam before he came in sight of the gatekeeper thus sent back to warn him, there was not a sufficient interval to prevent a collision.

It will be perceived that the inquiry which these circumstances obviously suggested has been further pursued by Captain Laffan, and that he has endeavoured to form an opinion upon the sufficiency or insufficiency of the rules by which the breaking power attached to trains, the weight of the trains, the interval required to be preserved between them, and the distance to which signals are to be sent back in case of accident, are regulated on the London and North Western Railway; and that after carefully considering this question, and making several experiments, he has arrived at the opinion that the present regulations are not sufficient for the public safety, and has found it to be his duty to make the important recommendations with which he concludes his report.

I have, &c.,

*The Secretary of the
London and North Western Railway Company.*

H. D. HARNESS,
Capt. Royal Engineers.

*General Manager's Office, Euston Station,
January 24, 1850.*

SIR,

YOUR letters under date the 2nd and 3rd of January, inclosing copies of two reports made by Captain Laffan on the 11th and 31st December, have been laid before the Directors of the London and North Western Railway, and I am desired to reply to them.

Captain Laffan's reports refer to two collisions, which occurred upon this Company's railway on the 6th of August and 14th November, and which, although arising primarily from different causes, that officer attributes in both instances to the practice of allowing trains to follow each other at too short an interval. The Directors therefore consider that it may be convenient to take the two reports together.

Before entering upon the main question and the consideration of the recommendations which Captain Laffan has considered it his duty to offer, there are a few points of minor importance, but still of much interest, which require to be noticed.

In relation to the accidents on the Newton incline, Captain Laffan (among the secondary causes which led to the disaster) attributes it to the absence of any definite instructions in the London and North Western Company's printed regulations, prescribing that a careful inspection shall be made of all waggons coming from other lines, before allowing them on the London and North Western Railway.

The second regulation for breaksmen in the printed code is as follows:—

"They are carefully to examine the loading and sheeting of the waggons before starting from *each* station, to insure the protection of the goods from rain and sparks. They must also, at *every* station where the train stops, ascertain that the loading of the trucks has not moved, and especially that it does not overhang the sides."

These instructions appear to the Directors to be very "definite," and they are at a loss to

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understand what Captain Laffan would require. If he contemplates that every one of the 1,500 loaded waggons per diem which pass to and from the 37 railway Companies with which the London and North Western Company exchange traffic shall be unsheeted and examined, such a process, besides seriously endangering the safety of the goods, would so block up and impede the business of the line that the work could not be carried on.

In regard to the couplings of the waggons, although the present mode has been in operation for more than 20 years without any serious inconvenience, the Directors are free to admit that an improvement may be made; the subject has not escaped them, and their waggon superintendents have been, and are, engaged in perfecting a plan for obviating the risk of waggons breaking away, which they hope shortly to bring into operation.

Captain Laffan's remark, that the hooks being thrown out of the eye-bolt is a contingency "that occurs every day," can, however, have no reference to this railway, where it is of rare occurrence indeed.

The practice of running passenger-carriages and goods-waggons together in a train has been the usual and ordinary mode of carrying on the traffic upon many lines of railway. The only case in which it occurs on the London and North Western is in a single trip train, running from Warrington to St. Helen's junction and back, in regard to which the Directors can see no possible danger. The number of waggons with this train is limited to six.

Having disposed of these preliminary matters—the question of the interval to be allowed between the trains—the objections urged by the Inspector of Railways to the present rule, and the suggestions he makes for the future conduct of the traffic, remain to be considered.

In regard to the accident on the Newton incline, the Directors cannot agree with Captain Laffan, that it occurred from any defect in the Company's regulations, and the evidence of the Superintendent of the Northern Division of the railway is directly opposed to the statement, that the gatekeeper "ran back as fast as he could." On the contrary, Mr. Norris is of opinion that the man neglected his duty on this occasion, and that had he used ordinary precaution the collision—which as it was took place at a very reduced speed—would have been altogether avoided.

It is admitted that the trains were running at an interval of five minutes, and it is in evidence that the gatekeeper was warned to proceed back, in order to warn the coming train, before the leading train stopped, yet he only succeeded in reaching a distance of 350 yards, which is quite inconsistent with the assumption of "his running back as fast as he could."

In his remarks upon this accident, Captain Laffan appears to think that the Company's servants did their duty, and that "good guidance" was aided by "good fortune." The Directors do not quite understand the force of the latter remark; but they have no hesitation in expressing their opinion, that had the gateman made reasonable exertion, the accident might have been avoided.

In respect to the accident on Whiston incline, also, there can be no doubt that the engineman of the passenger-train was exceeding the speed at which the regulations prescribe that he shall travel at that part of the line, and to this cause, concurrent with the remarkable contingency of a train of waggons breaking loose in going down a steep incline, and not to the insufficient interval between the trains, must the accident be attributed.

Here again was neglect of duty in the breaksman not being a sufficient distance in the rear. Captain Laffan, however, illustrates the facility with which successive trains may be stopped, if due care is taken.

Whatever rules and regulations may be adopted, it is impossible to provide against occasional neglect of duty on the part of the servants, although the most rigid discipline is exacted, and the severest penalties are enforced.

Captain Laffan has entered upon an elaborate, and highly interesting course of experiments, to ascertain the distance in which a train of a given weight and at a given speed can be pulled up with the present breaking power. Without entering upon any analysis of these experiments further than to remark, that in practice the state of the atmosphere, and consequently of the rails, exercises a large influence on the breaking power, the Directors remark that these experiments show that a goods-train at 25 miles an hour may be stopped in 513 yards; a passenger-train of 16 carriages at 45 miles, in 779 yards on a level, and 889 yards on an incline of 1 in 150.

From these facts Captain Laffan deduces an argument, that the present regulation of sending a man back with a signal 600 yards is insufficient for the public safety; the Directors beg respectfully to state that the experiments of Captain Laffan appear to them to confirm the soundness of the regulation in question, for a signal can under almost any circumstances be seen more than 300 yards, and more frequently 400, which, added to the 600 yards in the rule, gives a distance beyond the power of collision under the unusual circumstances indicated by Captain Laffan. The Directors have, however, no objection to increase the distance should the Commissioners think it necessary; at the same time, their experience leads them to the belief that the present allowance is ample, and that to increase it might defeat the object in view.

To the remarks of Captain Laffan on the mode of conducting the traffic upon the Liverpool and Manchester Railway, and to his theoretical recommendations for remedying what he considers an evil, the Directors can only offer their daily practical experience of nineteen years. That experience teaches them that the amount of traffic, and the frequency of trains on the Liverpool and Manchester line, has been one great cause of the admitted safety with which it has been conducted; the Directors can point to the long period I have named, and (in no boasting spirit) inquire under what circumstances, and on what railway the traffic has been carried on with greater safety. To Captain Laffan's suggestion, that a better distribution of the times of arrival and departure might be made on this branch, I am desired to remind the Commissioners that when trains travel from London, Aberdeen, York, and other distant places

to Liverpool, it is impossible to regulate in practice their arrival within a scale of minutes; and to his remark that if the danger which he alleges to exist (but which the Directors do not admit), cannot be lessened, the "time has arrived for considering the question of additional rails," I am instructed to remark, that if the Board has been enabled to carry on the business upon the Liverpool and Manchester line for 19 years with scarcely an accident, they cannot doubt their power to so for the future, considering that, unfortunately for them, the opening of new lines has reduced the business there by nearly one-third.

Captain Laffan appears to have arrived at the conclusion in his own mind, that the accidents in question were caused by the regulation which permits trains to follow each other at an interval of *five minutes*, and suggests that the interval should be increased. The Directors have received this intimation with some surprise, for they cannot forget that the regulation itself was imposed upon them by the Board of Trade. In the year 1842, when the Manchester and Birmingham line was about to open, this question was carefully considered; at that time the Grand Junction and the Manchester and Birmingham Companies were in a state of hostility, the latter intimated their intention of running their trains over the Grand Junction Railway. The Directors knowing the feeling that existed, and fearing danger to the public in consequence of the excitement that prevailed, prescribed a considerable interval between successive trains. They were over-ruled by the Board of Trade, who, in their letter under date the 25th June, 1842, fixed *five minutes* between successive trains of the same description, as sufficient for the public safety. If, therefore, between rival companies using the same line, acting under different authorities and different regulations, and under peculiar circumstances of irritation, *five minutes* was considered enough by the Inspector of Railways, it has certainly surprised the Directors to be now blamed for adopting that very interval with their own trains under a single and concentrated management, and they are inclined to think that the fact itself must have escaped the recollection of the Board of Trade. If the accidents have indeed arisen from the cause assigned by Captain Laffan, they have resulted from a *rigid adherence to the regulation laid down for their guidance by that Board*, and against which the Directors, having reference to the peculiarities of the case, ventured at the time respectfully, and strongly, but ineffectually to remonstrate.

In conclusion, I have to add that the safety of the public form at all times the paramount object in the minds of the Directors: they will carefully consider how they can provide for it; and I am instructed to say that measures are being adopted to increase the weight of the break-vans on the Liverpool and Manchester line, and thereby to render their breaking power more effective.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

MARK HUISH.

Office of Commissioners of Railways, Whitehall,
January 30, 1850.

SIR,

I HAVE the honour to lay before you, for the information of the Commissioners, the following observations upon Captain Huish's letter to you of the 24th inst., in reply to my reports of the 11th December, 1849, and 31st December, 1849, of which copies had been sent to him.

In my report of the 11th December, 1849, I had remarked upon—

"The absence of any definite instructions in the London and North Western Company's printed regulations, prescribing that a careful inspection shall be made of all waggons coming from other lines before allowing them on to the London and North Western Railway."

Captain Huish points out that the 2nd paragraph in the London and North Western Company's regulations for the guidance of the breaksmen of goods trains, enjoins that—

"They are carefully to examine the loading and sheeting of the waggons before starting from each station, to insure the protection of the goods from rain and sparks. They must also, at every station where the train stops, ascertain that the loading of the trucks has not moved, and especially that it does not overhang the sides."

When reading this paragraph previous to sending in my report, it then seemed, and on reading it again now, it still appears to me, that the regulation does not provide a sufficient security against the danger arising from goods-waggons improperly packed being sent on to a line so full of traffic as the London and North Western Railway.

The first part of the paragraph confines the attention of the breaksmen to seeing that the goods are secure from rain or sparks; but it might, and in the case of the Newton collision, which formed the subject of my report of the 11th December, 1849, it *did* happen that goods might be quite secure from sparks, and be of such a nature as not to be damaged by rain, and at the same time be so insecurely placed in the waggon as to endanger the safety of the train.

The second part of the paragraph again confines the attention of the breaksmen to seeing that the goods have not moved; and though in the case of a waggon which has come from a considerable distance it may be naturally presumed that the goods which have not moved are securely packed, it appears to me that the same circumstance affords no adequate proof of safe packing in the case of a waggon which comes on to the London and North Western Railway from a short branch line over which it has moved slowly.

In the case of the accident near the Newton incline, it will be remembered that a large and heavy package of plate-glass, placed in a most insecure position in a waggon, without any precaution to keep it in place, had come safely over the short line from St. Helen's, but that it

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fell over against the side of the waggon, and caused a stoppage, which led to a collision when descending the Newton incline on the London and North Western Railway.

It appeared to me, therefore, very desirable that the inspection of waggons coming on to the London and North Western Railway should not be confined to seeing that the goods were protected from rain and sparks, or that they had not moved in the waggons, but that in all cases where the distance the waggon had already come with safety did not afford a reasonable proof of secure packing, the inspection should be extended to seeing that the goods were properly secured, and not likely to break loose.

Captain Huish remarks upon my expression that the hooks of goods-waggons being thrown out of the eye-bolts is a contingency that occurs every day. That expression was founded upon my own experience often repeated, and upon the concurring testimony of several breaks-men and engine-drivers of goods-trains in the service of the London and North Western Railway Company. I am happy to learn that a new mode of coupling is likely to be introduced.

Captain Huish states that, with respect to the collision near the Newton incline,—

“The Directors have no hesitation in expressing their opinion that had the gateman made reasonable exertion the accidents might have been avoided;” and he also states, that “Mr. Norris is of opinion that the man neglected his duty; and that had he used ordinary precaution, the collision (which, as it was, took place at a very reduced speed) might have been altogether avoided.”

In Mr. Norris's report on the collision, addressed to Captain Huish, and forwarded by Captain Huish to this office, with his letter of the 7th August, 1849, Mr. Norris makes no allusion to the alleged neglect of duty on the part of the gatekeeper; and one sentence of that report says, “I cannot attach blame to any of our men.”

Captain Huish again, in his letter to you of the 16th August, says—

“I may add that, since writing, the Directors have met and taken a mass of evidence upon the subject. The result of the investigation has satisfied them that the accident was one which did not arise from carelessness on the part of any one, but was the result of a combination of unfortunate contingencies.”

My own opinion, founded upon the testimony of all the parties who were present on the occasion in question, is, that the gatekeeper immediately obeyed the signal he received from the foreman of plate-layers, and that he made as much haste as he could. The engineman and the stoker of the goods-train which he went back to stop, both agree that the man was *running* towards them when they saw him.

Captain Huish also remarks upon “the neglect of duty in the breaksman” (of the goods-train which stopped upon the Whiston incline), “not being a sufficient distance in the rear.”

In my report of the 31st December, I have stated that the man in question had scarcely recovered from the effects of the fall he received on throwing himself from his van while it was yet in motion, when the train which followed ran into his train. Under these circumstances, I do not see how he could have got to a distance in rear.

The remainder of Captain Huish's letter does not appear to call for any observation, beyond remarking that, in my opinion, it would not be safe to assume that “a signal can under almost any circumstances, be seen more than 300 yards, and more frequently 400.” I do not think it would be safe to assume that a signal can be seen till the following engine has come much nearer, and, under certain conditions of the atmosphere, till it has actually come up to the man sent back to stop it.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. M. LAFFAN,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
February 8, 1850.

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 24th ult., relating to the reports of Captain Laffan on two collisions which occurred on the northern section of the London and North Western Railway, and to forward, for the consideration of the Directors of the Company, the remarks of Captain Laffan on the several allusions to his reports made in your letter.

In your communication it is stated that the Directors of the Company have no objection to increase the distance to which signals are to be sent back, if the Commissioners think it necessary; and I am to inform you that the Commissioners are only desirous to direct the attention of the Directors of the Company to the observations of the Inspecting Officer, and to the reasons on which he founds his suggestions. Except under some extraordinary circumstances, such as that which occurred in 1842, and to which you allude in your letter, the consideration of the regulations necessary for the safe and commodious working of different parts of the line, their attention from time to time, as improvements are introduced or circumstances are varied, must evidently rest with the Directors of the Company; but the Commissioners consider that the observations made by Captain Laffan in his reports on the point referred to, as well as his observations upon the interval to be enforced between trains, and on other subjects, are deserving of the attention of the Directors of the Company in establishing regulations suited to the present time, and that a serious responsibility will rest upon them if their attention having been directed to the opinion of the Inspecting Officer, as to the doubtful efficiency of the arrangements at the time the accidents reported upon occurred, those regulations do not now receive their careful reconsideration.

The Commissioners have instructed me to add, that they are glad to perceive by your letter

that the breaking power of the trains is likely to be rendered more effective; and that they request to be informed of any further precautions which may be adopted to secure the public safety on the Liverpool and Manchester line.

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I have, &c.,

To the Secretary of the
London and North Western Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

General Manager's Office, Euston Station,
March 2, 1850.

SIR,

YOUR letter under date the 8th February, giving cover to a report of Captain Laffan, under date the 30th January, was yesterday laid before the Directors.

They have given the report their best consideration, and having weighed the remarks and arguments of the Inspector of Railways, they regret that they cannot modify the views contained in my former letter.

They are unable to detect the deficiency in their regulation which Captain Laffan discovers, and they are satisfied that if the breaksmen "carefully examine the loading and sheeting of the waggons before starting from each station," and also "at each station where the train stops ascertain that the loading of the trucks has not moved," they have done all in their power to prevent accident.

Captain Laffan indeed appears to admit this conclusion, but seems to think that an exception to it exists where the waggons come from a short line.

If, therefore, Captain Laffan will define the limit at which such extra examination shall commence, the Directors will meet and consider his recommendation.

With reference to the collision at Newton junction, and Mr. Norris's report, that gentleman states:—"My report was made on the evening of the 6th, on the afternoon of which the accident happened, and before I had an opportunity of making a full inquiry. I was afterwards of opinion, and am so now, that the gateman did not go back fast enough, or as fast as he might have done. The goods-train had left the junction five minutes after the passenger-train, and travelled slower. Now, allowing one minute for the slacking of the passenger-train, the gateman would have full four minutes to run back in. A strong man can run at the rate of 10 miles an hour for half a mile, and four minutes at this rate gives 1,173 yards as the distance he ought to have been."

With regard to the more important matter of the distance which it is desirable to maintain between successive trains, the Directors will be ready to take into their earliest consideration any specific regulation which the Commissioners of Railways may think proper to forward to them, but as the Board of Trade have decided, after due inquiry, that an interval of five minutes is sufficient for the public safety between trains of rival Companies, running upon the same rails, they feel that there can be no sufficient reason for apprehending accident where the same elements of danger do not exist.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

MARK HUISH.

Office of Commissioners of Railways, Whitehall,
March 8, 1850.

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter dated the 2nd instant, in reply to the communication from this office on the 8th of February, on the subject of the accident which occurred at Warrington on the 6th August, and at the Whiston incline on the 14th November, 1849, and to inform you that the Commissioners have no observations to add to the remarks contained in their letter of the 8th ultimo.

I have, &c.,

The Secretary of the
London and North Western Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

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MIDLAND RAILWAY.—(Nottingham and Lincoln.)

SIR,

Whitehall, December 28, 1849.

I HAVE to report to you, that upon receipt of your letter of the 8th inst., conveying to me the directions of the Commissioners of Railways, to inquire into and report upon the state of the Nottingham and Lincoln Branch of the Midland Railway, and the circumstances attending an accident reported by the secretary to have occurred to the mail train on the morning of the 6th inst., I communicated with the Railway Company, and on the 11th December inspected the Nottingham and Lincoln Branch, and made the necessary inquiries; I have deferred this report in consequence of continued absence from London, and a desire to obtain further information, as regards the nature of floods generally, in the low country bordering upon the Trent.

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(Nottingham and
Lincoln.)

It appears that on the 5th December, a very heavy flood occurred on the lower part of the River Trent, by which the lowlands bordering upon it between Nottingham and Newark were completely flooded, being in many places several feet under water. The railway passes through these lands, and a little below Newark forms an embankment, which keeps the water from the river from flowing freely over the adjoining meadows, which, however, are flooded by another stream, or by the backwater from the Trent passing under a bridge which carries the railway over that stream, some distance lower down the river than where the accident occurred. On the evening of the 5th at 4 o'clock, the foreman plate-layer of the district walked over his beat and looked at the sluice where the accident occurred, and although the water was high he saw no cause of apprehension, and he considered that there was only a foot difference of level in the water on the opposite sides of the embankment. I should have stated, that the sluice in question was on the north or river side of the embankment, which is here only a few feet high, and was erected for the purpose of allowing any water which might lodge in the meadows on the land side of the embankment to run off through a brick-arched culvert of small dimensions laid under and across the railway. The flood must have continued to rise during the night of the 5th, but no damage to any extent had been done at 9 o'clock, when the up-mail passed without anything being observed by the driver or guards, but the down-mail, in passing shortly after 4 o'clock on the morning of the 6th, on arriving at the culvert, was stopped by the two last carriages of the train getting into the water, the engine tender and one other carriage having passed safely over. The water had burst the culvert, and excavated a passage for itself through the embankment. The flood being still very high, at the time of my inspection, I was not able to ascertain the exact form of the culvert, and whether built with an inverted arch in the bottom of it; but, I am inclined to believe, that the water must have rushed through the sluice, which was imperfect on the upper side, and acted on the foundations, and so caused the culvert to fall in, and that the train must have arrived just at the moment that it was giving way, and thus that the leading part of it escaped being thrown into the chasm. The Company are about to restore the culvert, and at the time of my inspection, a temporary timber bridge had been made by laying balks across the opening, resting on piles driven to carry them, which rendered the passage of one line by trains quite secure, the railway being worked as a single line from Newark to the next station, Collingham, for which purpose the Company had arranged that one specified engine was to travel over that portion of the line with every train.

From inquiry, it appears that the sluice in question has never been opened since it was erected at the time of the construction of the railway, the Company having been required to place it there by the proprietors of some adjoining property, with a view to remove any water that may remain after the floods, and for which he had no other outlet into the river, the natural drain of the country.

Under these circumstances, the flood not being higher than has been known before since the construction of the railway without producing injury, I do not consider that the Company have been guilty of any want of precaution in not guarding against this accident. Mr. Barlow, the engineer, has however now issued the inclosed orders to plate-layers and inspectors of permanent way, which will, it is to be hoped, effectually prevent the recurrence of any risk to trains upon the lines of the Midland Company generally.

Near Lowdham station, also upon this line, the flooding of a small mill-stream had produced some damage to the line. Its direct course was nearly straight, and through a timber-bridge, carrying the railway with ample water-way; but the railway being on an embankment, had been formed from side-cutting, between which and the stream on the upper side of the embankment a small bank of earth had been left, so that the stream should not be diverted into the side-cutting. This embankment, probably by being lessened by continual wear, and also by the weight of the flood water, was forced in, and the stream thus rushed through the side-cutting, and found its way out through a small culvert not intended to carry such a mass of water, and which not being inverted, was damaged, and an accident might have occurred had it not become known to the station-porters that the stream was injuring the culvert. Timber was placed across the opening, and the traffic was not stopped.

I also remarked another small culvert without an invert, apparently built on a very soft foundation, the vertical brick sides to which had considerably settled. It would appear advisable to place an invert under these walls to secure them. Whilst upon this subject, I may remark that the system of constructing railways has been to inquire generally from the oldest inhabitants the extent of the highest floods known by them, and from the data of the landmarks, which are generally to be ascertained on every stream, indicating the extent of the greatest known flood, to calculate the space to be allowed for the escape of flood waters through railway embankments crossing or skirting valleys; but attention having been drawn of late years to a very great extent to the drainage of lands for agricultural purposes, it appears that the extent and nature of floods in streams and rivers has materially altered, and may be expected from year to year, as agricultural improvements progress, to vary still more. The effect of heavy rains is more speedily felt in the rivers and streams which are the natural and only outlets to the drainage of large districts, producing not only higher floods, but greater rapidity of currents, and which will continue to increase unless the outfalls of these streams are improved, to correspond with the improvements in drainage. This will account also for the water in the streams being diminished in dry seasons beyond what was formerly the case, the same cause operating to prevent the gradual supply to the streams of the water which used to maintain in them a certain level, that water being carried off more rapidly by the improved drainage. To this cause it appears to me not improbable that in many cases the means which have been provided for the escape of flood-waters will be found not to suffice, and thus damage similar to that which has now occurred on the Nottingham and Lincoln Branch of

the Midland Railway, may be expected to occur in the event of heavy rains in districts drained by natural water courses, near to which railway embankments and works have been erected.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

Appendix No. 66.

Midland Railway.
(Nottingham and
Lincoln.)

Special Order to Plate-layers.

PLATE-LAYERS are required, in the event of a flood, to examine carefully the action of the water through the culverts and bridges on their respective lengths, and should they see the water rushing violently, or any other cause to apprehend danger, they must immediately inform the inspector of the length thereof, and must, at the same time, exhibit the proper signals for the trains to proceed cautiously, or to stop, as necessity may require; and until the inspector arrives, they must take all precautionary measures for securing the stability of the line.

W. H. BARLOW, Engineer.

Derby, December 7, 1849.

Engineer's Office, Derby, December 7, 1849.

IN consequence of a serious accident having happened on the Nottingham and Lincoln line by the bursting of a small culvert, inspectors of permanent-way are required, in the event of a flood, to examine carefully the action of the water through the culverts and bridges on their respective lengths, and should they see the water rushing violently, or any other reason to apprehend danger, they must immediately appoint a competent person to watch the place, and signal the trains to proceed cautiously, or to stop, if necessary; and at the same time they must take such precautionary measures as may be required to secure the stability of the work, and immediately report the case to the Superintendent of Permanent Way, and to the Engineer's office, at Derby.

W. H. BARLOW, Engineer.

*Office of Commissioners of Railways, Whitehall,
December 31, 1849.*

SIR,

I HAVE been directed by the Commissioners of Railways, in reference to your report on the state of the Nottingham and Lincoln line to request you to communicate privately with the engineer of the Midland Railway Company on the subject of the culverts remarked upon in the report above mentioned, as constructed without an invert.

I have, &c.,

Capt. Simmons, R.E.,
&c. &c.

H. D. HARNESS,
Capt. Royal Engineers.

APPENDIX No. 67.

EAST LANCASHIRE RAILWAY.

Appendix No. 67.

East Lancashire
Railway.

SIR,

Bury, Lancashire, June 1, 1849.

I am instructed by the Directors of this Company to forward, for your information, copy of a letter addressed to the magistrates assembling in Petty Sessions at Burnley, and beg to subjoin an outline of the proceedings that have, in the opinion of the Directors, rendered the transmission of such a communication necessary.

The contractors implicated in the dispute are Messrs. Richard and William Hattersley; and the contract under their charge extends from Hapton to Colne, a distance of about 9 miles. By the contract deed, they are bound to maintain the permanent way and works for 12 months after completion.

The Directors have had cause of complaint, generally, against the contractors, for their tardy execution of the works; and on several occasions have given formal notice to them as to the necessity of greater exertion, which notices generally have been disregarded.

On the opening of the line to Colne, a considerable portion of the works remained still to be completed; and as the contractors had previously, and still persisted in disregarding the instructions of the Directors, as conveyed by their engineer, the Company on the 9th March last (with a view to the public safety and the completion of the railway) gave notice, under the provisions of the contract, of their intention to maintain the line and complete the works, unless the Messrs. Hattersley, within the prescribed period, brought upon the line the necessary number of men and materials for this purpose. This notice was unheeded, and the Company had no alternative but to finish the work themselves; and in their endeavours to do so, they have been met by a resort to force on the part of the contractors, to compel the withdrawal of the Company's men.

The contractors still persisted in employing their own men upon the line, as previously; although the works had been taken possession of by the Company, in pursuance of the notice aforesaid, and were being proceeded with by men specially employed by the Company. Hence arose a series of disputes and assaults between the two sets of workmen, which eventually led to the case being brought under the notice of the magistrates at Burnley. On the 23rd April an understanding was come to, in the presence of the magistrates, that neither

Appendix No. 67.
 East Lancashire
 Railway.

party should interfere with the work-people of the other. This arrangement was observed by the contractors for some time, but was eventually broken by their causing the workmen in their employ to mix themselves with the servants of the Company on the railway, so as to prevent the works proceeding, and the Company then found it necessary to remove the contractors' men from the line. This led to the case being again brought before the Burnley magistrates, and resulted in a number of the Company's men being committed on a charge of riot, although in the opinion of the Company's legal adviser no breach of the peace had been committed, inasmuch as the men had been quietly removed.

This decision in effect deprived the Company of all authority over their own works, and rendered it necessary to withdraw the men they had employed.

In these circumstances the Directors consider it their duty to forward to you the enclosed communication, together with the explanation now given, for presentation to the Commissioners of Railways.

I have, &c.,

JAMES SMITHELLS, *Secretary.*

Capt. Harness, R.E.,
 &c. &c.

GENTLEMEN,

Bury, Lancashire, May 29, 1849.

I AM instructed by the Directors to inform you that, in consequence of your having come to a decision whereby the Company is deprived of the means of protecting their servants maintaining the railway and works in the Burnley district, the Directors have no course left but that of withdrawing, for the present, the men employed by the Company on that duty, and appealing to the Court of Chancery for redress.

In doing this the Directors wish it to be distinctly understood, that they hold the magistrates responsible for the safety of the public until the authority of the Company on the railway has been established.

I have, &c.,

JAMES SMITHELLS, *Secretary.*

*To the Magistrates assembling in
 Petty Sessions, Burnley.*

*Office of Commissioners of Railways, Whitehall,
 June 4, 1849.*

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 1st instant, with its inclosure, relative to a dispute between the East Lancashire Railway Company and the contractors, for the maintenance of the permanent way; and to inform you that the Commissioners have directed an inspecting officer of this department to inquire into the circumstances, and report to them whether the public safety is endangered by the proceedings in question.

I have, &c.,

*The Secretary of the
 East Lancashire Railway Company.*

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

Whitehall, June 18, 1849.

I HAVE to report that, in compliance with the appointment of the Commissioners of Railways, communicated verbally by you, and since received in your letter of the 4th instant, which having been mis-sent, only came into my hands on the 15th, having seen the engineer and solicitor of the Company, I obtained a copy of the letter from the secretary of the Company, to the Commissioners and its Enclosure, and proceeded on the 14th instant to Manchester in order to carry out their instructions, "to examine and report whether the public safety is endangered by the proceedings which are now taking place upon the East Lancashire Railway, in consequence of a dispute between the Company and the contractor for the permanent way;" the communication with its enclosure, from the Company, complaining of these proceedings, forwarded with your letter, is herewith returned.

From the statement of the Company, it appears that Mr. Hattersley contracted for the construction of 8½ miles, or thereabouts, of the East Lancashire Railway, from Hapton through Burnley to Colne, 3 miles of which, from Hapton to Burnley, was opened for the conveyance of the public in September last, and the remainder on the 2nd February of the present year. By the contract, the Company's officers state that the contractor is bound to maintain the road and works for 12 months after the opening of the railway, and it is to these 8½ miles to which the complaint of the Company had especial reference. I did not critically examine the whole distance, but only those parts to which my attention was particularly called by the Company.

The ballast in many parts is very deficient, and in one place, in a cutting near Burnley, of a very indifferent nature, but little removed from common clay. In the Barrack cutting at Burnley, I remarked that a slip had occurred, choking up the side drains, causing the bottom of the road to be in a very wet and bad state, and the rails had been forced inwards, so that the central interval between the two lines of rails was only 4 feet 8 inches, instead of 6 feet, which it ought to be and is elsewhere. I also found in one place, within the length of 100 yards, six broken chairs. I found several keys out, and the keys, where I examined them, appeared to be in a great measure of a temporary nature, very dry, and of such dimensions

that it is perfectly impossible that they could keep the rails firm in the chairs. The sleepers were many of them split, and the chairs badly seated upon them.

I enclose herewith a section, made at my request and forwarded by the Company's engineer, of an embankment between two bridges, in which the subsidence will be seen to have entirely altered the gradient, and I saw no preparations for remedying this defect. It ought never to have been allowed to go down to this extent. In fact, from the examination of the short lengths of the railway which I inspected, I consider that the railway is in a very bad condition, and in its present state quite unsafe for the conveyance of the public. I do not consider that the deficiency of ballast, and the imperfect state of the works are alone sufficient to call for this strong remark, but the absence of that care and attention which are necessary to bring all new railways, when first opened, into a proper state, and which is evident from the fact of the number of broken chairs, loose keys, &c., which were to be found. A considerable amount of work remains to be done on all new railways after their opening, such as the trimming of slopes, and making up of deficiencies in ballast, and keeping up embankments to their proper level, and other similar works; and it is the custom, and necessary for the public safety, that all due energy should be used in executing and maintaining them; but this has evidently not been given in the present instance, the engineer to the Company complaining that he cannot keep his own men upon the works. Under these circumstances, I can only state that the Company incur great responsibility in running trains, and the public great risks, the continuance of the works and line in their present condition being likely to produce serious accidents.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
June 18, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of the report made to them by Capt. Simmons, upon the circumstances referred to in your communication to this department of the 1st instant, and to inform you that, in the opinion of the Commissioners, the Company incurs a most serious responsibility in running trains upon their line while its condition is such as, in the opinion of Capt. Simmons, to endanger the public safety.

I have, &c.,

The Secretary of the
East Lancashire Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

Bury, Lancashire, June 22, 1849.

REFERRING to your communication of the 18th instant, enclosing the Report of Capt. Simmons on the state of the East Lancashire line, I beg to say that the Directors expect they will, in the course of this week, be in a position to put the line in perfect condition, as on Saturday next the motion for an injunction to restrain the contractor, Mr. Hattersley, from further interfering with the works will be heard; and the Directors cannot doubt but, under the circumstances, the Vice-Chancellor will at once grant an injunction. In the mean time, every precaution in the power of the Company will be used to avoid accidents on the line.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

JAMES SMITHELLS, Secretary.

APPENDIX No. 68.

LONDON AND NORTH WESTERN RAILWAY.—(*Rugby and Leamington Line.*)

SIR,

Whitehall, May 8, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that in compliance with the instructions contained in your letter of the 16th ultimo, I inspected the works of the Rugby and Leamington Railway, in order to be enabled to report, whether "their remaining in their present condition, if the time for completing the works is extended, will be attended with serious inconvenience to the inhabitants, and on the nature of such inconvenience," having previously communicated with the Secretary to the London and North Western Railway Company, and with the memorialists, who had petitioned the Commissioners not to grant the extension of time for the purchase of land and completion of the works, sought for by the Railway Company.

I find from the inspection of the works, and the statement of the engineer and contractor, that the whole line is in a very advanced state, their remaining only to be expended by the Company the sum of 55,000*l.* out of a contract for the whole of the works, exclusive of stations, rails, and chairs, of 260,000*l.*, which comprised the whole of the works throughout the extent of the line. Of this 55,000*l.* the contractor states, that the actual work remaining to be done

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East Lancashire
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London and North
Western Railway.
(*Rugby and Leam-
ington Line.*)

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London and North
Western Railway.
(Rugby and Leam-
ington Line.)

does not exceed 40,000*l*. The principal portion of this outlay will be incurred in or near the town of Leamington, in the completion of a viaduct through it, and connecting the other part of the Rugby and Leamington line with the present branch from Coventry to Leamington. This viaduct was commenced in August, 1847, and is in a very advanced state, being about two-thirds completed, but has progressed but slowly since April, 1848, when the works upon the line were almost entirely stopped. Forming part of this viaduct is a bridge of 139 feet span, to carry the railway over the angle made by four of the principal thoroughfares in the older part of the town of Leamington. This bridge would, according to its present plan, require four months to put in a fit state to enable the contractor to draw the material over to complete an embankment on the west side of the town, and the whole of the work might with facility be completed in seven or eight months, so as to enable the Company to open the railway through from Rugby to the junction with the Coventry and Leamington branch. Upon going along the railway to Rugby, I found that for several miles the rails were laid, and that the line was ballasted ready for the rails for a considerable length, and that the whole was completed to the formation-level, with the exception of about three months' moderate work, and some cutting reserved by the contractor until after the completion of the viaduct. The land had been purchased throughout, with the exception of that which may be required for accommodation for an intermediate station, which will probably not amount to much, as there is no town upon the road, and the population is not dense.

I was informed, as a reason for the incomplete state of the viaduct in the town of Leamington, that it is in contemplation for the Birmingham and Oxford Junction Railway to make use of this viaduct, and thus that the expense of a second viaduct should be avoided. As this other railway is upon the broad-gauge, the works would require to be slightly wider, to an extent which in the masonry and brick portions of the viaduct might be obtained by a reduction in the thickness of the parapet; but that it would require a modification of the bridge over the cross streets before mentioned. As the total estimated cost of this enlargement of the viaduct is, according to the statement of the Company's engineer, only 3,500*l*., I do not conceive, that even admitting that a delay were necessary to bring about this end, it would be advisable to prolong the inconvenience to the town, produced by the incomplete state of the works; but ample time appears to me to remain for completing this negotiation and the works before the expiration of the time at which they are required to be completed by Act of Parliament; and much more than in accordance with the spirit of the 70th clause 9 and 10 Vict., c. 368, being the Act for making the railway, which provides that the several works authorized or required to be made in or upon any of the streets or roads within the town of Leamington Priors shall, when commenced, be proceeded with by the Company with all reasonable despatch.

I have, &c.,

To the Secretary of the
North Western Railway Company.

J. L. A. SIMMONS,
Capt. Royal Engineers.

Appendix No. 69.

Lancashire and
Yorkshire Railway.

APPENDIX No. 69.

LANCASHIRE AND YORKSHIRE RAILWAY.

SIR,

Whitehall, June 19, 1849.

I HAVE to report to you, that having passed over that part of the Manchester and Bolton Railway, now the property of the Lancashire and Yorkshire Railway Company, between Manchester and the Clifton Junction, on the 15th inst., on my way to perform the duties to which I was appointed by your letter of the 4th inst., upon the East Lancashire Railway, I marked that the bridges to which the attention of the Commissioners was called by my letter of the 17th August last, and the construction of which had been reported by Capt. Coddington, in December, 1846, as *dangerous to the public*, have not yet been altered, with the exception of one, and that the other three remain in the same objectionable state. I have, therefore, considered it my duty again to bring the subject under the consideration of the Commissioners, as I fully concur in the opinion expressed by Captain Coddington.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
June 21, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of a report addressed to them by Captain Simmons, and to inform you that, in their opinion, it is incumbent on the Directors of the Company to take immediate steps to ensure the public safety, which, in the opinion of Captain Simmons, is endangered by the present state of the bridges on the Manchester and Bolton Railway.

I have, &c.,

To the Secretary of the
Lancashire and Yorkshire Railway Company.

H. D. HARNNESS,
Capt. Royal Engineers.

SIR,

Secretary's Office, Manchester, June 27, 1849.

Appendix No. 69.

REFERRING to your communication of the 21st inst., which was laid before the Directors yesterday, I am instructed to reply that, since my letter to the Commissioners dated 24th August last, the alteration of three more of the bridges on the Bolton Railway has been commenced, and will shortly be completed; in these three bridges are included two of those which Captain Simmons reports as remaining unaltered, but for which the castings are prepared, and which have been proceeded with as rapidly as circumstances permitted.

I have, &c.,

JOHN S. HEARN, *Secretary.*

Capt. Harness, R.E.,
&c. &c.

Lancashire and
 Yorkshire Railway.

APPENDIX No. 70.

Appendix No. 70.

IRISH SOUTH EASTERN RAILWAY.

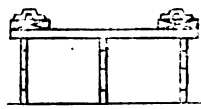
Irish South Eastern
 Railway.

SIR,

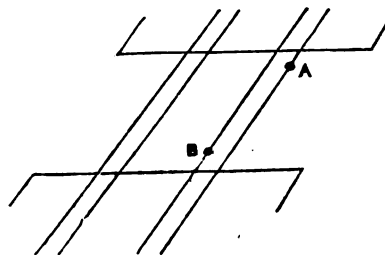
Whitehall, August 14, 1849.

I BEG to bring under the notice of the Commissioners the state of a bridge on the South Eastern Railway (Ireland), that casually came under my notice during my late visit of inspection in that country.

The bridge I speak of is near Bagnalstown, over the Dunleckney road. It is a wrought-iron lattice girder bridge, but differing materially in construction from those usually put up by Sir John Macneill, who stated to me, when I inspected this line in July, 1848, that owing to a want of headway over the road, he had been compelled to reduce the depth of the girder from 3 feet 4 inches, which, according to his calculation, was the depth due to the span of 43 feet, to 2 feet 4 inches. And to compensate for this reduction in the depth, he had placed three longitudinal girders under each line of railway, connecting them together at top and bottom by transverse wrought-iron plates, thus forming one compound girder about 5 ft. 8 in. wide by 2 feet 4 inches deep, approximating somewhat to a tubular girder, with lattice sides. These girders extend across the opening at an oblique angle of 45 degrees, consequently one side of the girder receiving the weight of the engine before that side is deflected and the opposite one raised.



The lateral motion thus imparted to trains passing at high speeds proved to be so great that it was found necessary, shortly after opening the line, to give the girder a square bearing, by means of alternate props at either end, viz., at A. and B., as marked on the sketch. These props still remain up, and besides interfering with the carriage-way, might be knocked away at any time by mischievous persons.



The girders, when first put up, were found not to deflect (under the weight of an engine) more than seven-eighths of an inch; it was therefore fairly presumed that they were of sufficient strength, but under the action to which they have since been exposed from passing trains, the deflection has increased to upwards of two inches. This, in my opinion, is a greater degree of flexibility than is safe in a permanent railway structure, and I would recommend that the present girders should be immediately replaced by others of a better construction, and until this is done, no train to be allowed to pass over at a greater speed than five miles an hour.

I have, &c.,

GEORGE WYNNE,
Capt. Royal Engineers.

Capt. Harness, R.E.,
&c. &c.

Office of Commissioners of Railways, Whitehall,
August 18, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of a report made to them by Captain Wynne upon the defective state of a railway bridge near Bagnalstown, and to request you to call the attention of the Directors of the Company to the subject with the least possible delay, that measures may be immediately taken for the substitution of girders of a better construction for those at present in use; and that in the mean time the temporary supports may be properly secured, and a very low speed enforced for all trains passing the bridge.

I am also to inform you that, until a satisfactory report is received of the state of this bridge, every opportunity will be taken by the Commissioners to ascertain its condition, by directing its inspection by the officers of this department.

I have, &c.,

H. D. HARNES,
Capt. Royal Engineers.

To the Secretary of the
Irish South Eastern Railway Company.

Appendix No. 70.

Irish South Eastern
Railway.

SIR,

*Irish South Eastern Railway Offices, 9, Kildare-street, Dublin,
August 29, 1849.*

I HAVE had the honour to submit your letter of the 18th instant, with report of Captain Wynne on the Dunleckney Bridge, to the Board, and am instructed to inform you, that the immediate attention of Sir John Macneill has been called to the subject, with the view of carrying out the suggestions of the Railway Commissioners.

I have, &c.,

*Capt. Harness, R.E.,
&c. &c.*

ANDREW WILSON, *Secretary.*

Appendix No. 71.

Shrewsbury and
Chester Railway.

APPENDIX No. 71.

SHREWSBURY AND CHESTER RAILWAY.

GENTLEMEN,

Sion, Oswestry, September 17, 1849.

I BEG to bring to your notice the state of a railway girder-bridge close to the station at Oswestry. It was erected shortly before the opening of the railway last year. Shortly after it was finished, one of the buttresses began to separate from the pier of the bridge; props were placed against it, but, notwithstanding, the chasm has continued to increase, and it is now about 3 inches wide. Besides this, one of the blocks of free-stone which caps the brickwork and supports one of the girders, has become displaced, and is protruded to the extent of about an inch. There are cracks in other parts of the bridge. These may or may not be symptoms of its insecurity, but it is right that they should be brought to your knowledge, more particularly as, about three weeks ago, I wrote to Mr. Roy, the person who is employed as secretary to the Company, and have received no answer to my letter; nor has anything yet been done to this bridge, which I viewed this morning, and found to be in a worse condition than it was a fortnight or three weeks ago. I beg to state that I am quite disinterested in making these complaints, excepting for the sake of my neighbours, the inhabitants of Oswestry, for I have never but twice or three times passed over the bridge, the Oswestry station not being that most convenient to this place.

I have, &c.,

WM. B. E. WYNNE.

SIR,

*Office of Commissioners of Railways, Whitehall,
September 19, 1849.*

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 17th instant, calling attention to the state of a bridge upon the Oswestry Branch of the Shrewsbury and Chester Railway; and to inform you that the first inspecting officer who is in that neighbourhood will be directed to examine the bridge in question.

I have, &c.,

*W. Wynne, Esq.,
Sion, Oswestry.*

H. D. HARNESSE,
Capt. Royal Engineers..

SIR,

Manchester, September 28, 1849.

I HAVE the honour to acquaint you, for the information of the Commissioners, that on the 26th instant I inspected a bridge on the Oswestry Branch, which Mr. Wynne in a letter to the Commissioners complained of as being in a dangerous state.

The bridge in question is the only one on the line; it is a cast-iron girder bridge, over a turnpike-road close to the town of Oswestry, and is built on the skew, and the embankments on either side are about 14 feet high.

The appearance which the bridge presented on approaching it on the west side, were strong shores set against the pilaster at the obtuse angle of the abutment, and also against the wing-wall; passing through the bridge, the corresponding pilaster was seen shored up in a similar manner; on examining the brickwork closely, the face of the south-west front, which was most strongly shored, appeared very slightly bulged; and an opening in the stones of the blocking course on the top of the brickwork was apparent, of about 2 inches: this could not be traced for any distance down the brickwork on the inside face of the same abutment; there were several small cracks extending from the top half-way down, but not further; and there was a slight wind in the upper part of the work where these cracks existed; the shoring of the corresponding pilaster on the east side was apparently a precautionary measure, as I could not trace anything wrong, except an opening in the stones of the blocking course, and that the stone which capped the pilaster was twisted in its bed, which was also the case on the other pilaster, and was evidently caused by the expansion of the outside girder which abutted against a rabote in the cap stone. The originating cause of the faulty state of the work appears to have been from throwing the weight of the embankment on the abutments while they were yet in a green state, and the subsequent vibrations from passing trains has to a certain extent further loosened the work. Mr. Robertson, the engineer, proposes building strong buttresses against the pilasters which are now shored up; and taking down the inside part of the south abutment as far as the work appears damaged, which is, as I before remarked, about half-way from the

top, and rebuilding it. These measures being adopted, I am of opinion the bridge will be placed in a perfectly secure state, and though I am not apprehensive of any immediate danger, I would recommend these remedial measures being undertaken before the setting in of the winter.

Appendix No. 71.
Shrewsbury and
Chester Railway.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
October 3, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you, that their attention having been called to the state of a bridge by which the Oswestry Branch Railway crosses a turnpike-road near the town of Oswestry, they directed that the first inspecting officer of this department in the neighbourhood should visit the bridge, and report to them thereon, and that from the report which has in consequence been made to them by Captain Wynne, it appears that the bridge is not in satisfactory state, and that, although he is not apprehensive of any immediate danger, he recommends that remedial measures should be completed before the winter.

The Commissioners trust that this recommendation will receive the attention of the Directors of the Company.

I have, &c.,

The Secretary of the
Shrewsbury and Chester Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

APPENDIX No. 72.

Appendix No. 72.
East Lancashire
Railway.
(Accrington
Station.)

EAST LANCASHIRE RAILWAY.—(Accrington Station.)

GENTLEMEN,

Blackburn, Lancashire, November 17, 1849.

I AM directed by the magistrates, assembled in Petit Sessions yesterday at Accrington, to draw the attention of your Board to the state of the East Lancashire Railway Company's station at Accrington.

The magistrates are of opinion that the arrangements made at that station are such as to cause not only great inconvenience but serious danger to the public. The complaints made by travellers are incessant. Passengers travelling from Accrington to Manchester have to take their tickets at one side of the station; they then have to cross no less than nine lines of rail to the opposite side where they enter the carriages. As the booking-office is only opened a short time before the arrival of the various trains, it often happens that three different trains are entering the station at the very time when parties are compelled to cross the lines, thus leaving them exposed to the danger of being run over,—a risk which is very much increased during the present dark evenings.

When passengers from Preston or Blackburn to Accrington happen to get into a carriage going forward to Manchester, they have to cross all the lines before they are allowed to leave the Accrington station.

The Directors of the Company have made various alterations at the station with regard to the ingress and egress of passengers, before completing certain arrangements which are absolutely necessary to the public safety.

The accommodation is very limited, and totally unequal to the neighbouring population, which, taking Accrington as the centre of a circumference of three miles, is upwards of 25,000.

The innumerable complaints from all parties of the inconvenience and absolute danger of this station have determined the magistrates to address you on the subject.

Communications have been repeatedly made to the Directors, but entirely without effect.

If the Board should be pleased to send a person down to view this station and inquire into its arrangements, I am desirous to say that the magistrates will attend and give any assistance in their power towards endeavouring to place matters on a better footing as regards the public convenience and safety.

I have, &c.,

To the Honourable
the Commissioners of Railways.

HENRY BROCK,
Clerk to the Magistrates.

Office of Commissioners of Railways, Whitehall,
November 19, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 17th instant, on the part of the magistrates assembled in Petty Sessions at Accrington, and to inform you that they have appointed an officer to inspect and report upon the station of the East Lancashire Railway Company at that place; and that due notice of the day fixed by him for such inspection will be given to you and to the Railway Company.

I have, &c.,

The Clerk to
the Magistrates, Blackburn.

H. D. HARNESS,
Capt. Royal Engineers.

Appendix No. 72.

East Lancashire
Railway.
(Accrington
Station.)

SIR,

Office of Commissioners of Railways, Whitehall,
November 19, 1849.

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of a letter from the magistrates assembled in Petty Sessions in Accrington, together with a copy of the Commissioners' reply to the communication in question.

I have, &c.,

The Secretary of
the East Lancashire Railway Company.

H. D. HARNESSE,
Capt. Royal Engineers.

SIR,

December 1, 1849.

I HAVE the honour to acquaint you that on the 23rd instant I proceeded to Accrington, on the East Lancashire Railway, to inspect the station there, having reference to certain complaints of danger and inconvenience to the public made by the local magistrates, arising from some late arrangements made by the Company. I met by appointment at Accrington several of the magistrates, and on the part of the Company, Mr. Perring, their engineer.

The magistrates handed to me a paper, of which the following is a copy:—

"Danger to the Public."

"1st. Passengers to Accrington having to cross the line from the Manchester side in consequence of the door being locked.

"2nd. Passengers from Accrington to Manchester have to cross the line after having taken their tickets.

"3rd. Both of the last objections might be removed by the door on the Manchester side being opened.

"4th. The inconvenience of waiting in an open shed during wet weather.

"5th. No direction boards to point out to passengers where to go.

"6th. Not a sufficient number of servants.

"7th. Extreme danger to the public through their having to cross the line on a dark night, when perhaps two trains are coming in on opposite sides.

"8th. Passengers to Preston on a wet day, wishing to remain in the waiting-room, have to cross the line twice."

In order that the Commissioners may fully understand the sources of danger alleged in the above statements, and allow them their just weight, I beg to refer them to the accompanying plan while I describe the arrangements connected with the station and the arrival and departure of the trains. The station is situated at the junction of the north and south line with the east and west line of the East Lancashire Railway; the former is the Manchester line and the latter the one between Colne and Preston. A large building to contain the booking-office, waiting-rooms, &c., with an easy and convenient access to the town, has been erected on the Manchester line, and until these few months has been used for the purposes it was intended for; but the Company, finding their main traffic to lie on the east and west line, have removed their booking-office to a temporary wooden building on that line, the access to which is by means of a wooden staircase up a steep bank: this arrangement is quite a temporary one pending the erection of a suitable station-house, the site of which, with proper approaches, is marked out and may be seen on the plan, and the erection of which, I understand, will probably be commenced in the spring. Meanwhile the access is closed on the Manchester line, which is the "door" alluded to in the 1st and 3rd statements, and a circuitous and (for the present) inconvenient approach substituted.

The arrangements of the trains are as follow:—Eight times a-day, between the hours of 7.55 A.M. and 7.50 P.M., three trains simultaneously meet at Accrington from Manchester, Colne, and Preston; these trains are then sorted and divided, and, when fully marshalled, take their departure for the same places, viz., Manchester, Colne, and Preston. The first train that comes in is the one from Manchester; it runs on past the old station to the points at the signals, and is shunted into the siding on the Preston and Colne line to the platform opposite to where the new station is to be; the engine is detached and sent out of the way; the train is then separated in the middle, one part being for Preston and the other for Colne. The next train which comes up is generally the one from Colne; it draws up at the signal-points, and separates there into two; the part that is to go on to Preston is drawn forward past the new station until it reaches the points of the crossing into the siding, into which it is shunted and joined on to the carriages for Preston which are standing there, while the part for Manchester is drawn on to the platform of the old station. The train from Preston has by this time come up; it is run on to the points at the signals, divided into two, the part for Colne is shunted into the siding, and joined on to the Colne carriages standing there which came from Manchester, and the part for Manchester drawn a little further on to the points beyond the signals and shunted on to join the train forming for Manchester at the platform of the old station; this completes the marshalling of the trains: the two for Colne and Preston are standing end to end in the siding, and the Manchester train is at the platform of the old station, and they are now ready to start for their several destinations. Besides all this shunting and passing to and fro of the carriages, an engine, to be out of the way, or for some other cause, is frequently placed in the carriage-shed, and issues out unexpectedly, forming another element of danger.

Now while all this is going on, persons from Accrington going to Manchester have to take their tickets at the new station, and then to cross the line to the old station. Passengers likewise from Colne and Preston going to Manchester, who may through inadvertence, or from

arriving late and in a hurry, have got into wrong carriages at either of the above stations, will also be compelled to cross the line. It may be said, that if passengers arrive in proper time they can cross before any of this shunting takes place: so they certainly could; but this would involve their coming at least 15 or 20 minutes before the train is ready to start; and no precautions will prevent Manchester passengers coming from the east and west frequently getting into wrong carriages, and they *must* cross over.

I know of no station, certainly none of any magnitude, similarly circumstanced to the Accrington one, where parties have to book on one side and then to cross a number of lines whilst that which is equivalent to the arrival and departure of six trains is going on. At Crewe station, on the London and North Western Railway, there is but one booking-office, and there three trains arrive simultaneously, but these are all formed into one, and the shunting takes place beyond the station, and there is no necessity for any one to cross the line; but, notwithstanding, the Company are making an over-crossing.

Were there two booking-offices at the Accrington station, and the ingress and egress to and from the old station re-opened, the sources of danger would be lessened, though not removed; the *inconvenience* complained of by the magistrates would certainly be removed by this arrangement. But the circumstance of the Accrington station standing on a considerable embankment offers a facility for making an underground passage of easy access which would remove *all* source of danger from the causes above stated, and would not, I believe, involve any considerable expense.

I have no hesitation in expressing my opinion that the representation of the magistrates is fully borne out, in stating that "the present arrangements involve considerable danger to the public, and that this danger will be greatly increased in dark and wet nights;" and I would recommend the Commissioners urgently to press upon the Company to take *immediate* steps first to lessen, and finally, by the measures I have pointed out, or some other which may be more convenient to them, to remove altogether the danger to which the public is at present exposed.

I am, &c.,

Capt. Harness, R.E.,
&c. &c.

GEORGE WYNNE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
December 3, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Captain Wynne's report of his inspection of the Accrington station of the East Lancashire Railway Company; and to acquaint you, for the information of the magistrates of Accrington, that a copy of that report has been forwarded to the Railway Company, with a request that they would take immediate steps to remedy the evil complained of in your letter of the 17th instant.

I have, &c.,

The Clerk to
the Magistrates, Blackburn.

H. D. HARNESS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
December 3, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of Captain Wynne's report of his inspection of the Accrington station of the East Lancashire Railway Company, and to request you to call the attention of the Directors of the Company to that officer's remarks, particularly as regards the public safety.

I am at the same time to express to you the hopes of the Commissioners that some immediate steps will be taken by the East Lancashire Railway Company to remedy the evil so justly complained of by the local magistrates.

I have, &c.,

The Secretary to
the East Lancashire Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

Bury, Lancashire, December 4, 1849.

SIR,

I BEG to acknowledge the receipt of your communication of the 3rd instant, enclosing a copy of Captain Wynne's report of his inspection of this Company's station at Accrington, which shall be submitted to the Directors on an early day.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

JAMES SMITHELLS, Secretary.

Appendix No. 72.

East Lancashire
Railway.
(Accrington
Station.)

Appendix No. 73.

South Eastern
Railway.

APPENDIX No. 73.

SOUTH EASTERN RAILWAY COMPANY.

*Grote's Crescent, Blackheath,
December 11, 1849.*

GENTLEMEN,

I HAVE the honour to enclose herewith the copy of a letter signed by upwards of a hundred constant passengers by the North Kent line of the South Eastern Railway Company, addressed to the Directors of that railway, remonstrating against the substitution for the ordinary first and second-class carriage, of a novel description of carriage, believed to be dangerous on several accounts, together with the reply of the Directors thereto.

These carriages are about 39 feet 8 inches long, and 9 feet wide, run on eight wheels, and are divided into four compartments of apparently equal size; one of the centre compartments being intended for first-class passengers, the other three for second-class passengers. To convey some idea of their size it may be mentioned that on one occasion, in one first-class compartment 28 passengers were crowded, at which rate one carriage might be made to carry 112 passengers.

The gauge of the rails is 4 feet 8 inches, and I am told some of the curves on the line are very sharp.

Now, as the South Eastern Railway Directors have expressed their belief that there is not any description of carriage on the English lines of railway more safe than these large carriages are, myself and fellow travellers would feel very greatly obliged if your Honourable Board would authorize the Inspector of Railways to satisfy our anxiety in reference to the following queries:—

1. What is the average length of the carriages in use on railways in England of a gauge not exceeding 4 feet 8 inches?
2. Is or is not such average length the best length with reference to safety, having regard to the average of curves on the English railways, and if not, what is the best length?
3. May a railway carriage be made of any length without affecting its safety? and upon a line of 4 feet 8 inches gauge, and having such sharp curves as the South Eastern Railway, what length of carriage is to be most recommended?
4. What is the average breadth of the carriages in use on railways in England of a gauge not exceeding 4 feet 8 inches?
5. Is or is not such average breadth the best breadth with reference to safety, having regard to the average of curves on English railways, and if not, what is the best breadth?
6. Upon a line of 4 feet 8 inches gauge, and having such sharp curves as the South Eastern Railway has, what breadth of carriage is to be most recommended?
7. Are not the large carriages in use on the North Kent line both too long and too broad to travel safely at full speed over some of the curves of that line?
8. Are the large carriages in question built of extra strength in proportion to their extra length and width, so that in the event of their falling over an embankment, or being run into by another train, the passengers would not fare worse than those in the first and second-class ordinary carriages?

The sanction of Parliament to the particular curves, gauge, and general construction of this line of railway was obtained on the evidence of engineers and others, who calculated only on the use of carriages similar to those used on other English railways of a similar gauge. This attempt to run carriages so long, so broad, and so slightly constructed as those to which the attention of your Board is requested may be designated as a species of fraud on the Parliament, and an abuse of the powers granted to the Company. Indeed it now appears as necessary to define the extreme dimensions of the carriages to be run on each railway as to define the height of their embankments or the sharpness of their curves.

I have, &c.,

HENRY HEALD.

*The Hon. Commissioners of the Railway Board,
Board of Trade, Whitehall.*

November 30, 1849.

WE, the undersigned constant passengers by the North Kent line of your railway, take leave to express our disapprobation of the carriages recently placed thereon, inasmuch as they expose us to much danger and discomfort. To danger, because in consequence of their extreme length (39 feet 8 inches), they are quite unsuitable to a railway having such sharp curves as are to be found on this line, in passing over which there is necessarily a strong pressure on the sides of the curve, and an inclination to run off the line; this tendency is much increased by the great width of the carriages (9 feet), which on a gauge of 4 feet 8 inches (the gauge of this railway) causes the carriages to extend on each side beyond the wheel 2 feet 2 inches. The effect of these combined causes is seen in the fact, that the carriages in question are continually thrown off the rails, thereby endangering the safety of the trains with which they are connected, and causing great irregularity in the service of the railway generally. If no accident to any passenger have yet occurred in consequence, the circumstance neither justifies the continued employment of the carriages nor dispels our just alarm.

As to the discomfort of the carriages, it may be comprehended at a glance. One first-class compartment is intended to receive no less than 22 passengers! though there is not proper sitting room for more than 16. There are no divisions to prevent inconvenient or improper crowding, which, to ladies especially, is very objectionable.

The draught of air into so large a carriage is much complained of by those exposed to its

influence, to remedy which the windows are frequently closed; this in a well-filled compartment quickly renders the atmosphere close and disagreeable.

Lastly, iron bars are placed across the windows, thus preventing the possibility of communicating with the guard or railway attendant in case of accident or otherwise.

These inconveniences we feel to be serious, and those who have paid, and are willing to pay for the best accommodation, are entitled to expect more liberal treatment.

Under these circumstances, the undersigned do not feel it unreasonable to request that the carriages in question may be immediately withdrawn, and that those used during the months of August, September, and October may be restored. We feel it due both to you and to ourselves to add, that as our *personal safety* is daily involved, we shall hope for and expect your early attention to this application.

[Here followed the signatures of more than a hundred constant passengers.]

The Directors of the South Eastern Railway Company.

Appendix No. 73.

South Eastern
Railway.

*South Eastern Railway, London Terminus,
December 5, 1849.*

SIR,

I HAVE the honour to acknowledge the receipt of a statement signed by you, and addressed to the Directors of this Company, regarding the large carriages now in use on the North Kent line.

I beg to acquaint you, that alterations are being made in some of these carriages, which if found to answer, as the Directors think they will, will be generally adopted, and the Directors trust that every reasonable convenience will be found by passengers using them.

With regard to safety, the Directors feel bound to state to you, that they believe there is not any description of carriage travelling on the English lines of railway more safe than these large carriages are, and this opinion of the Directors is supported, not only by experience of their use on other lines of railway, but also by the concurring opinion of scientific men, who have given their consideration to the subject.

I have to add, on the part of the Directors, their thanks for your frankness in communicating your opinion to them, and also to assure you, that it is their earnest desire to afford every possible convenience, facility, and punctuality to passengers using the South Eastern lines of Railway.

I have, &c.,

*Henry Heald, Esq.,
&c. &c.*

G. T. HERBERT,
Secretary.

*Office of Commissioners of Railways, Whitehall,
December 12, 1849.*

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 11th instant, and to inform you that an officer of this department has been directed to inspect the carriages in question.

I have, &c.,

H. Heald, Esq., Grote's Crescent, Blackheath.

H. D. HARNESS,
Capt. Royal Engineers.

Grote's Crescent, Blackheath,

GENTLEMEN,

January 17, 1850.

ON the 11th December last I had the honour to address to you a letter on the subject of the large carriages in use on the North Kent line of the South Eastern railway, in reference to which I received a communication from Captain Harness, informing me that an officer of your department had been directed to inspect the carriages in question.

Without wishing to press for the report of the gentleman to whom this duty may have been intrusted to his inconvenience, I beg with all respect to express my anxiety to be made acquainted with the result of his examination, as I have no alternative but to ride in these carriages daily.

I have, &c.,

To the Hon. Commissioners of Railways, Whitehall.

HENRY HEALD.

SIR,

Whitehall, January 18, 1850.

I HAVE to report to you, for the information of the Commissioners of Railways, that, upon the receipt of your letter of the 12th ultimo, conveying to me their directions to inspect and report upon the carriages on the North Kent Railway, referred to in a letter from Mr. Heald of the 11th December, forwarding a copy of a memorial purporting to have been signed by a number of constant passengers upon that railway, and addressed to the Directors, with the reply of the Directors thereto, I communicated with the Secretary to the South Eastern Railway Company, and inspected one of the carriages complained of, on the 17th December, and having found that there was no immediate danger to be apprehended from their use, I proceeded to the north to attend to other duties to which I had been appointed, and that I again examined one of the carriages in question, and passed over the North Kent Railway in it from London Bridge to Rochester, in order to ascertain whether there is sufficient space for the passage of these carriages at all points of the railway,—whether in tunnels, cuttings revetted with masonry, under-bridges, or elsewhere.

Appendix No. 73.

South Eastern
Railway.

The carriages are of large dimensions, the under-framing being 40 feet in length by 9 feet in breadth, exclusive of buffers, supported upon eight wheels, the axles of which are 10 feet apart, giving therefore a bearing upon the rails of 30 feet. These frames appear to be of sufficient strength to resist the ordinary concussions of railway traffic; and although, of course, in the case of a violent collision with any other substance or carriage, it is to be expected that much damage will be done, and possibly a carriage-frame very much crippled and injured; nevertheless, I conceive that this carriage-frame is as strong as ordinary carriage-frames, and therefore that the passengers, as far as collisions are concerned, are as safe in these as in ordinary carriages.

A peculiar adaptation of spring allows the wheels to traverse to the extent of six inches, so that each set of wheels on one side can, under the rigid carriage-frame, assume the position necessary for passing round a curve of 3.41 chains radius, but the axles are kept perfectly parallel. I passed over curves, the radii of which were 30 chains, at a rate of speed of about 30 miles an hour, and do not hesitate to report that there is no danger to be apprehended from the carriages passing round the curves of the North Kent Railway at high velocities. Of course, to prevent the centrifugal force being felt by the passengers, it will require that on curves the outside rail should be raised to correspond with the highest speeds intended to be used.

At present the upper parts of the doors of the carriages have iron bars fixed across them, to prevent passengers, when the windows are down, from putting their heads out. This precaution has been necessary in consequence of a doubt as to the width of the bridges and other works upon the railway, whether they allow a sufficient space for the projection of a head beyond the carriage itself. As these bars are very unsightly, and give to the passengers an idea of danger, although it may not really exist, I caused a number of laths to be prepared and fastened to the carriage-frame, allowing them to project 18 inches, which appears to me sufficient to allow for the projection of any person beyond the carriage as much as they will can with safety to themselves. I found that at many places these laths were broken, and that the wires and posts of the electric telegraph were fixed very near to the carriages, in one case, under a bridge, so near that a hand projecting through the bars would almost be struck by them. The works will allow the rails to be shifted so as to clear the masonry at this point, and the telegraph wires can be moved to a different position under the bridge. I should recommend that this be done at once, and that at the other places where the 18-inch laths did not clear, that similar adjustments either of the works or rails be made, after which the iron rods may be removed. They are objectionable on the score of safety, for in the event of an accident the passengers cannot liberate themselves. I did not pass over the main line of the South Eastern Railway to ascertain whether these carriages are such that passengers can be carried in them with safety over that line; but from the information I obtained from the engineer, I believe they cannot; therefore until satisfied on this point, I cannot recommend that the Commissioners should give their sanction to the use of them upon any but the North Kent line from *London Bridge* to Rochester, and then only after the adjustments before alluded to shall have been made.

The width of these carriages, however, appears to be objectionable on account of the doors projecting so far over the platforms, passengers being often in the habit of opening doors before trains come to a stand-still. This might be prevented without the use of the iron bars, by fixing the glass part of the doors so that they cannot be lowered, and providing some means of signaling to the guard, either by striking a gong on the outside of the carriage, or by some other contrivance.

The traverse also of the body of the carriage seems excessive, as there are no curves having a much less radius than 10 chains, even at points entering sidings, which for a bearing of 30 feet will give but a very small versed sine as requisite for the traverse. The longer traverse of six inches may, I conceive, possibly be injurious, and produces an excessive jerk in the case of going round a curve at high velocities, more particularly if the principal part of the load should be on the side of the carriage furthest from the centre. I have annexed hereto a report from the builder of these carriages to the Directors of the Company, which gives a more detailed description, but forbear to remark on the accommodation and details which do not relate to the question of safety.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

GENTLEMEN,

December 21, 1849.

HAVING received an official communication from the Secretary of the South Eastern Railway, to the effect that allegations have been made to your Board respecting the long composite carriages built for the North Kent line by the firm to which I belong, stating that the said carriages are unsafe and unsuited to the traffic, I beg to lay before you the following statement:—

The carriages are 40 feet long by 9 feet wide. They are formed of two frames 20 feet each, on four wheels, so arranged that they couple rigidly together by two screws at the lower frames, and two at the upper corners of the bodies, so that when coupled they form one eight-wheel carriage, with spring buffers at each corner in the usual position. When uncoupled, they are four-wheeled carriages, easy to handle or remove from the line, as in case of repair.

The wheels are of solid wood, and the tyres are held on by side-retaining rings, without any bolt-hole piercing the tread of the tyre, which holes are a common cause of a tyre break-

ing, and supposing one of the tyres to break across, it would still be held fast by the retaining rings. Experiment, during several months, has proved that a tyre, purposely cut into three pieces, is safely held on at work. The wheel centres are pressed into the tyre cold by hydraulic pressure, so that no injurious heating and cooling takes place. The great advantage of the solid wood centres is, that the tyre is always kept circular, that the fanning action is prevented, and that the wood helps to prevent vibration of the axle.

The axles project more than usually distant from the wheels, so as to increase the distance between the centres of bearings to 7 feet.

The bearings are 8 inches by 3 inches in diameter, so that the total length is 7 feet 8 inches, leaving 8 inches overhung of the body on each side. This increased length of axle lessens the chance of breakage by blows of the wheel, as room is left for elastic action. The bearings or journals run in Adams' patent grease-tight axle-boxes, so that they are immersed in a bath of grease on the underside, and are also lubricated from above in the usual manner. It is, therefore, almost impossible that they should heat.

The bearing-springs are formed of single plates of highly elastic steel. The whole friction of wheel, when in action, is reduced to an axis movement capable of lubrication. Should a spring break, no harm can result, as it is inclosed in iron-work, and the frame would simply rest on the axle-box, and it can be replaced by withdrawing and replacing two bolts.

The base of the wheels, on the rails, extends over a space of 30 feet by 4 feet 9 inches, the four axles being 10 feet apart from each other. The base of the springs is 36 feet by 7 feet 8 inches. The base of the body is 9 feet by 40.

The springs are attached to the axle-boxes by shackles and roller, so that when on a curved line each axle and each pair of wheels can diverge laterally right or left to the extent of 3 each when the pressure of the flanges is against the rails. Thus the carriage, though 40 feet long, can pass freely round curves, giving a versed sine of 6 inches in 30 feet, or two rails length, which gives a radius of little more than three chains and a half. Now, as the versed sine of the rails at the points and crossings is never less than six chains, or nearly 400 feet, it is very clear that the carriage must be perfectly safe at any speed on rails whose extreme curves are not less than 1,360 feet.

From the above combination of mechanical arrangements, it follows that long carriages are safer to passengers than the ordinary four-wheel short stock. The following are the reasons: One railway wheel being keyed on firmly to one shaft, it is necessary to make the tyres of a conical form on their peripheries smaller on their external, and larger at their flange diameter, in order to compensate for the different lengths of the rails on curves, when the wheel is supposed to gather on its large diameter by the centrifugal force throwing it on the outer rail, and *vice versa* on the inner rail. But as the axle has no end-play in the boxes, and the boxes are retained by the axle-guards in the same plane as the carriage-frames, it follows that the whole body must partake of the lateral movement of the wheels, which, on a line out of order, becomes such an incessant oscillation and annoyance to passengers, and is moreover so dangerous, that the practice has obtained of coupling the whole carriages of a train closely together to induce steadiness. The result is, that the wheels become partial sledges, and an enormous excess of steam power is required to draw the trains.

But with the long carriages no such coupling is required, as each one, by its length and width, runs steadily without oscillation, and the body, by its inertia, and the proper position of the centre of gravity, maintains its equilibrium vertically and laterally. The wheels require no axle-guards, and each pair is free to move according to the circumstances of the rails without affecting the superstructure. It is scarcely within a calculation of chances that eight wheels should be combined in the same circumstances to produce a specific oscillation, and, in point of fact, they do correct each other's irregularities, and without any blow on the rails, as in the case with the wheels of the ordinary stock when the momentum of the body is added to that of the wheel.

Another cause of safety is found in the multiplication of the wheels. If one wheel of four breaks, the carriage usually pitches down. One wheel broken out of eight is of course of far less risk.

Another source of safety is the elasticity of the springs, and the freedom of the wheels to move up and down vertically to suit the irregularities of the rails. With the common carriages, and also with engines, the practice is to fasten the springs down with the eye of the axle-guard, so that if passing a sunk rail the wheel is suspended to the carriage, and this, happening at a bad joint, is a frequent cause of accident in getting off the line. Therefore, to render the joints of the rails firm and immovable is an object of the greatest importance.

To render the wheels still more perfect, two things are essential. First, that the wheels should move on the axles independently of each other, as well as the axles in their boxes. Secondly, the mischievous practice of applying breaks to stop the wheels, and thus grinding flat surfaces on their tyres, as well as breaking down the joints of the rails, should be abandoned, and that proper sledge-breaks should be made to run directly on the rails.

That the foregoing statements as to the structures of these long carriages are correct may be gathered from the fact that passengers can easily stand steady on them, and read and write while at speed.

The next question of safety is as to strength in the framings. Examination will show that the section of timber, and the strength of knees, is greater than that of any of the ordinary class of passenger carriages.

And in case of collision, there is one element of safety in the carriages which does not exist in the ordinary stock.

When a train is suddenly retarded by an obstruction in front, or struck by an engine in the

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—
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rear, the buffers usually collapse to their full extent. In this case there is about four tons' pressure of elastic springs ready for recoil. This pressure is so exerted as to make the carriages rise upwards from the rails. In this act the buffer-heads slip past each other, and frequently break the legs of the passengers in the corner seats. The carriages then ride on a heap, one on the back of the other. In the long carriages this risk is avoided. Their length and weight precludes their rising from the rail. Having dealt with the question of safety, the next question is their accommodation.

The bodies are divided into four compartments each. Each compartment has two doors, with glasses to let down, and four large fixed plate-glass windows, 3-8ths inch in thickness. There are also four ventilators about 5 inches by 18 inches, capable of being open or closed at pleasure, but the ventilators would be preferable in the roof. One of the compartments is trimmed for 20 first-class passengers, the others hold 32 second-class each; total 110. But one of the first-class has been altered to hold only 18 passengers, a central seat being differently arranged, with elbows, and it is exceedingly convenient. Even for a long journey this carriage has an advantage over the ordinary kind, as the roof is very high, and passengers could stand upright to relieve the pressure on their limbs.

When these carriages were first constructed, it was thought, as they were wider than usual, there might, by possibility, be some temporary projections that would endanger the safety of a passenger incautiously putting his body out of the window. Some years back a heavy statue had to be transported over the New Cross-bridge, on the Croydon line, and it was judged needful to support the bridge by shores. A passenger seeing, something unusual, put his head out from an ordinary carriage and was killed. To prevent any risk of this kind from the curiosity of passengers on a new line, wires have been applied externally to the doors of the large carriages for two purposes, to prevent passengers protruding their heads and bodies, and from opening the doors unguardedly. In ordinary carriages they are accustomed to do this previous to arriving at the stations, and the porters probably, in the first instances, were not prompt enough for impatient people. On the North Woolwich line, on the opposite side of the river, where similar carriages have been in use for three years, the door-windows are all barred, and no complaint has taken place.

In summing up these remarks, it may be as well to state that these carriages cost, to build, only one-half the price per passenger of the ordinary stock, which is a very important matter to Railway Companies, and especially those of low dividends, and they will doubtless be appreciated by the Board of Trade, who have ever been anxious to acquire cheap transit for the public.

In working this kind of stock there ought also to be a considerable saving in expenses. By increasing the breadth of the train the length is decreased, and the action of the wind also. There is also a considerable saving in the length of platform and attendants, four doors to open in lieu of eight, and eight wheels to grease and to draw in lieu of sixteen.

To conclude:—In considering the question of railway economy, there can be no mechanical doubt that the narrow gauge involves less friction than the broad when any curves exist. But notwithstanding this the narrow gauge has thus far achieved more than the broad, having 9 feet by 40 carriages, or 360 feet floor area, whilst the maximum of the broad gauge is only 8 feet 6 by 28 feet; total 238. But it is to be lamented that the narrow gauge has not greater width in the side spaces, for in such case the carriages might be 10 feet in width, giving a larger floor area, and in the case of first-class carriages permitting a space of 2 feet for a central longitudinal passage, and 16 compartments of four passengers each; total 64. This would have been the steadiest possible express carriage, and the most convenient, as it might be fitted with every convenience for the road. A 12-inch cylinder engine, rightly constructed, would draw three such carriages; total, 160 first-class passengers between London and Dover in an hour and a half; and, in the cold season, the waste steam of the engine might be applied to warm them. On the broad gauge it would be practicable to construct carriages 50 feet by 12.

I am, &c.,

WILLIAM BRIDGES ADAMS.

In the United States the ordinary length for railway carriage is 40 feet, but the improved plan is 60 feet, with a passage-way down the centre.

Office of Commissioners of Railways, Whitehall,
January 21, 1850.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you, in reply to your letter of the 17th instant, that they are satisfied, by the report of their inspecting officer, that the carriages referred to in your communications to this department can be used with safety to the public on the North Kent Railway.

I have, &c.,

J. Heald, Esq.,
&c. &c.

H. D. HARNESS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
January 22, 1850.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed extract from Captain Simmons's report on the carriages in use upon the North Kent Railway, and to request you to call the attention of the Directors of the Company thereto.

I have, &c.,

The Secretary of the
South Eastern Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

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Appendix No. 74.

Monmouthshire
Railway and Canal
Company.

MONMOUTHSHIRE RAILWAY AND CANAL COMPANY.

SIR,

39, Grosvenor-place, Bath, February 9, 1849.

MAY I beg the favour of your laying the enclosed memorial before the Commissioners of Railways; and, if it should be necessary to address me, please to do so at No. 39, Grosvenor-place, Bath.

I have, &c.,

HENRY MARSH.

Capt. Harness, R.E.,
&c. &c.

The MONMOUTHSHIRE RAILWAY and CANAL COMPANY, formerly called The MONMOUTHSHIRE CANAL NAVIGATION COMPANY.

THE MEMORIAL of Henry Marsh, Proprietor of the Rock Colliery, in the County of Monmouth, respectfully sheweth,

THAT the above Company obtained an Act in the last Sessions of Parliament, intituled "The Newport and Pontypool Railway Act Amendment Act, 1848," for altering and amending the Newport and Pontypool Railway Act, 1845, which last-mentioned Act embodies the original Acts under which the Company was formed, namely,—firstly, an Act passed in the thirty-second year of the reign of His late Majesty King George the Third; secondly, an Act passed in the thirty-seventh year of the same reign; and, thirdly, an Act passed in the forty-second year of the same reign; under the powers of which three last-mentioned Acts all the roads, canals, and other works of the above-named Company at present open for traffic have been constructed.

That neither the railway from Newport to Pontypool, nor the branches thereof authorized to be made by the Act of 1845, have been completed.

That the freighters on these roads and canals have hitherto provided, at their own cost, and are still provided, with all necessary motive power, waggons, and carriages, for the transport of coals, iron, and merchandize; also places for loading and shipping, and a considerable extent of branch roads, and various other works connected therewith, have been formed and constructed expressly to suit the existing roads of the said Company.

That your Memorialist possesses about 230 waggons purposely made for such roads, and which have hitherto been and are now in use for the conveyance thereon of coals and other goods amounting to about 40,000 tons annually.

That the distance of his works from Newport (the place of shipment) along the said tram-roads is 15 miles, 8 miles of such roads being the property of the said Company, and 7 miles being branch roads, the property of other parties.

That the said Company have recently given your Memorialist and other freighters notice, that on and after the 1st day of August next they shall require us to use and provide, at our own cost, waggons similar to a pattern waggon which they have provided and placed on their road for inspection, the estimated cost of such waggon being 60*l*.

And your Memorialist further sheweth that such waggons are neither adapted to the roads of the said Company in their present state, nor to the branch roads leading therefrom to most of the collieries and ironworks, and to the loading and shipping places. That the net weight of coals carried in such waggons is in the proportion to the gross weight of waggons and coals of only two to one, whereas in the existing waggons the proportion exceeds that of three and a half to one. That the amount of resistance in traction along these tramways will be greater with the proposed waggons than with those now in use, particularly in passing round curves. That he believes that no such waggons are used on any tramway in the kingdom, and that there is reason to expect that should such be adopted, in pursuance of the order of the said Company, that alterations, attended with considerable expense, will shortly become necessary, in order to adapt them to the present or any other road of improved construction. That such waggons, even if applicable to these roads, are unnecessarily costly for the description of traffic and low rate of speed at which they would be required to travel, and are far more expensive than those used on many railways of superior construction to the tramways of the said Company.

That the present roads of the said Company are laid with tram-plates, and not edge rails, and that the branch roads leading into them are similarly constructed.

That the curves are very sharp and irregular, many being of nearly 1½ chains radius, and the gradients steep.

That neither the said Company nor the proprietors of the branch roads possess compulsory powers for the purchase of land for the improvement of their roads in respect of the last-named difficulties; nor have they power, if so disposed, to convert the tramways into railways.

That notwithstanding certain improvements which have been made and are still in progress since the passing of the Act of 1845, no alterations essentially different from those made in the shape of repairs previous to the passing of the said Act have been effected.

That the curves, &c., are a very serious impediment to the use of such waggons, and the roads generally are, by reason of their construction, weak and insecure, as compared with modern railways, and would be dangerous to travel on with ordinary loads at reasonable rates of speed.

That if your Memorialist is not relieved from the obligation which the said Company now

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endeavour to force upon him, namely, "to provide, at his own cost, and on and after the 1st day of August next, to use such waggons only for the transport of coals as are agreeable to their pattern," the difficulty in the transit of coals to the port will be so great as to entail on him serious loss, if not to oblige him to stop his works.

Your Memorialist, therefore, most earnestly solicits the interference and aid of your Honourable Board, for the purpose of relieving him from the obligation of providing waggons of the description now decided on by the said Company, and of preventing the sacrifice of his present stock of waggons and contingent works, without adequate compensation or improved facilities for the transport of coals from his works; and also that the said Company may be required to convey his waggons along their tramways without hindrance as heretofore, or upon trucks, to be provided by the said Company, he paying for the use of such trucks at a reasonable rate per mile.

And your Memorialist will ever pray.

To the Commissioners of Railways,
Whitehall.

HENRY MARSH,
Rock Colliery, near Newport,
Monmouthshire.

Office of Commissioners of Railways, Whitehall,
February 12, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of a memorial addressed to them by Mr. Marsh, and to inform you that they will be glad to receive any explanation the Directors of the Monmouthshire Railway and Canal Company may have to offer as to the facts stated therein.

I have, &c.,

The Secretary of the
Monmouthshire Railway and Canal Company.

H. D. HARNESSE,
Capt. Royal Engineers.

SIR,

Newport, Monmouthshire, February 24, 1849.

I BEG to acknowledge the receipt of your letter, addressed to me on the 12th instant, and also an accompanying copy of the memorial of Mr. Henry Marsh, the proprietor of the Rock Colliery, addressed to the Honourable Commissioners of Railways, in reference to the requirements of the Monmouthshire Railway and Canal Company, with regard to the construction of the waggons to be used on the tramroads of that Company on and after the 1st August next, and, at your invitation, submit to you a few observations thereon.

It is quite true, as alleged by Mr. Marsh, that under the Company's old Acts, the latter of them passed in the 42nd Geo. III., the whole of their canals and tramways at present open for traffic have been constructed. In the year 1845 they obtained another Act, under the title of "The Newport and Pont-y-pool Railway Act, 1845," for making a railway and divers branches, as therein contained, and also for improving their existing railways so as to adapt them for locomotive steam-engines, and (at the earnest request of the freighters) for enabling them to become carriers, and provide for their own use and that of the freighters sufficient carriages on the payment of certain rates; and I would beg to refer you to the 110th clause of the Act now in citation, as affording you a clear conception of the obligation of the Company and the general purport of the measure, so far as the Company's old roads fall within the scope thereof. Upon this Act being obtained, the Company proceeded to prepare for its execution; but the rates authorized to be levied were found so inadequate for the expenditure contemplated that they were obliged to have recourse to the Legislature for relief; and in the year 1848 they applied to Parliament for and obtained the last Act adverted to in the memorial, under the title of "The Newport and Pont-y-pool Railway Amendment Act." The primary provisions of that Act are an extension of time for the completion of their works, and authority to raise additional money, and a release from the obligation to provide waggons for the carriage of mineral productions; and as this latter provision is one to which the memorial has reference, I beg to direct your notice to the 12th section, as having direct relation to the question.

The Company have now expended in the improvement of their old railroads a sum of 140,000*l.* out of their revenue, legally divisible amongst the shareholders, and have nearly relaid with the best wrought-iron tram-plates the whole of their old lines, not more than about two miles being left of the cast-iron plates that were heretofore used; and at the present time improvements are in course of execution that will, before they are completed, involve an additional outlay of about 50,000*l.* at the least. It is the purpose of the Company to comply with the directions of their Act, and on the 1st August next to open their old lines for both goods and passenger traffic; and, in the contemplation of such a change of operations, they, after much consideration, adopted a tram or waggon as a model for the use of the freighters, being advised that it was the best and most economical that could, under the circumstances, be had. The conclusion they arrived at was the result of much inquiry; they despatched their engineer to various railways in the kingdom used for the transit of mineral productions; obtained the opinions of some of the most experienced men in the kingdom with regard to the construction of a suitable waggon, and in their inquiries considered economy as well as utility. They invited the freighters to co-operate with them in the first instance in providing a suitable model or plan; but this the freighters declined doing, preferring to wait the issue of the Company's decision before giving any opinion upon, or expressing either their assent or dissent to anything the Company might propose.

The first allegation of Mr. Marsh is, that neither the railway from Newport to Pont-y-pool, nor the branches thereof authorized to be made by the Act of 1845, have been completed. The remark I would wish to make in respect of this charge is, that the Company have already expended in the construction of the Pont-y-pool Railway more by 30,000*l.* than they were authorized by the Act of 1845 to raise for the making of it; the necessity, therefore, of applying to Parliament in the year 1848, for powers to raise additional money and elongate the period of construction, is apparent. The gross amount already expended in the construction of this line amounts to 150,000*l.*, and a further sum, approximating to 150,000*l.* more, will be required to complete it, exclusive of the old lines, denominated, I conclude, in Mr. Marsh's memorial, by the name of branches.

Mr. Marsh is quite correct in his affirmation that the freighters possess, at the present time, all necessary motive power, waggons, and carriages, for effecting the transit of the goods along the Company's old roads and the branches extending therefrom.

To permit, however, the freighters to continue to use their present means of carrying on their traffic would virtually amount to an abrogation of the Company's Act of Parliament, and a repudiation of improvement or alteration in the management of the traffic along their lines. The waggons at present used are principally drawn by horses, though many engines are employed in the traction. The construction of them generally is inconsistent with even the existing regulations of the Company, and they are met with in a variety of shapes, sizes, and frames. The Company, by the terms of their Act, will be obliged to use locomotive power in the traction of all carriages passing along their lines; but the present waggons of the freighters are so rudely constructed, being without either springs or buffers, and having frames of irregular height, and wheels so out of perpendicular that they cannot be drawn in a train without great danger and hazard; and the Company would be held, in public opinion at least, most culpable were they to endanger life, limb, and property, by failing to exercise the rights the law has invested them with, and insisting upon proper and suitable carriages being used by all persons.

The loading and shipping places are in character with the waggons, the whole being a disgrace to the age and the district; but, however that may be, it is, I conceive, a question the Company are not called upon to answer.

Mr. Marsh may perhaps possess 230 waggons: there are many other freighters possessing a much greater number—say 500 or 600 each—and yet so much have their minds been impressed with the advantage or necessity of using other waggons of a superior description, that they have contracted for the purchase of them, and are prepared to aid rather than thwart the Company in the accomplishment of their purpose, which is to have all carriages so constructed as to travel together in trains with safety. The notice alluded to by Mr. Marsh as being given by the Company to the freighters was made in the form of circular prefixed, marked No. 1, its object being to dispel every doubt that might exist with regard to the intentions of the Company, and to notify the requirements involved in your circular addressed to the Company, under date of the 6th July, 1847.

The freighters therefore appointed a deputation to meet the executive of the Company, when the latter, after the interview, issued the circular prefixed, marked No. 2, the former being unable to allege any reason to induce the Company to alter their views.

The waggons required by the Company to be used are well adapted for both the Company's roads and the branch roads leading therefrom, experiments in my presence having been tried with the model waggon, and the result being most satisfactory, it having travelled, both laden and empty, with great ease and safety along the branch roads in which the worst and sharpest curves occur; nor is the observation of Mr. Marsh, with respect to the resistance in traction of the proposed waggons, as compared with the like resistance in traction of the present waggons, more correct than his remark with regard to the non-adaptation of the proposed waggon to the roads. The difference in the number and size of the wheels of the two kinds of carriages affords a solution to the question, the fact being that the friction produced by the model carriage is less than that produced by the old. But independently of the question altogether, I would ask why Mr. Marsh should object to a burden being placed by the Company upon their own shoulders, as they will provide the whole motive power, when they are willing to bear it. Had they thought the degree of friction incident to the use of the model waggon could have been reduced without involving further difficulty, they would, from a mere regard to their own interests, have not failed to reduce it.

There are no tram-roads equal to those belonging to the Canal Company in the kingdom, and there is no reason to expect that any material alterations in the proposed waggons would become necessary should the present roads be converted into ordinary railways, and the edge-rail be substituted for the tram-plate, the wheels of such waggons being adapted to work upon either. It certainly is desirable that such change should be effected whenever circumstances will permit.

The only remark I will make upon the costliness of the proposed waggons is, that waggons equally expensive are used upon the Taff-Vale Railway, which lies in the immediate neighbourhood.

The diagram furnished by Mr. Marsh, and attached to his Memorial, is incorrect. I annex a true one hereto. The tram-roads of the Company are laid with the best wrought-iron tram-plates, 19 feet in length, weigh 75 lbs. to the yard, and are placed on cast-iron chairs, 3 feet apart, as in the case of edge-rails upon roads of modern construction.

Mr. Marsh is in error when he states "that the curves upon the Company's roads are very sharp and irregular, many of them being nearly $1\frac{1}{2}$ chains radius." The improvements that have been made already involved the reduction of many of the curves: the worst curve by far

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now left is the one at Risca-bridge, which has a radius of $4\frac{1}{2}$ chains, but which will be removed as soon as at all practicable; and when the projected improvements have been completed, which they will be by the 1st of August next, the whole lines will not be worse in point of curves than many of the modern constructed railways.

Whether possessed of compulsory powers or not, no great difficulty has been experienced in acquiring possession of the land requisite for effecting the improvements.

After the statement heretofore made by me to the amount expended, and now being spent, in improving the roads, it will be unnecessary to notice the allegation that no essential alterations have been made since 1845.

The model waggon has 4 wheels, is 10 feet in length, weighs 2 tons 19 cwt., and carries a load of 5 tons. There are waggons now used by some of the freighters which have 8 wheels, are 16 feet in length, weigh from 3 to 5 tons, and carry a load of about 10 tons; it is absurd, therefore, to say that the model waggon cannot travel upon the roads without serious impediment, and the more so as the curves from which the impediment is alleged to arise have been eased to such an extent that, with the exception of the curve alluded to at Risca-bridge, there really are none greater than those that are met with upon many railways of modern construction.

With respect to the allegation of the weakness and insecurity of the roads, when compared with modern railways, I have no hesitation in giving to it a positive contradiction, and think it will only be necessary to direct your attention to the description of waggons adverted to now being used, and that if the tram-plates have, and do bear, without accident or displacement, a weight of 13 to 15 tons under the pressure of a single waggon, they will be quite sufficient to bear the pressure which the model tram and its load will give of 8 tons, without either danger or insecurity. If, however, upon this point you should entertain any doubt, I will, upon an expression of your wishes, procure and transmit to you the opinions of some of the principal freighters, who feel perfectly satisfied that the model tram is well calculated to work upon the roads with perfect ease and security, and at reasonable rates of speed.

The obligation of the Memorialist, Mr. Marsh, to provide himself with waggons is one from which the Company have no power to relieve him. By their Act of 1848, and which if should not be forgotten was opposed day by day in the Committee of the House of Commons by the freighters, the Company were exonerated from the obligation to provide mineral waggons for the freighters, who, Mr. Marsh being present on the occasion, objected to the relinquishment of the Company's responsibility to become general carriers, but offered, as the basis of compromise, which was suggested by Sir Robert Peel, who was the Chairman of the Committee, to release the Company from the obligation to provide mineral waggons, and to take it upon themselves.

The issue of the negotiation for the compromise carried on under the sanction of the Committee was, that they at length dictated the terms, which were inserted in the Bill and became the law in the manner set forth by the provisions of the Act, much to the dissatisfaction of the Company, who, under the railway mania of 1844 and 1845, and the influences to which it gave birth, accepted in the latter year a Bill embracing provisions and obligations that, had they been enforced, would have involved them in insolvency and ruin, and who by their Bill of 1848 sought relief from the difficulties with which they found themselves environed to a greater extent than, or in a different manner, to that in which they obtained it. Had not their existence been perilled by the Act of 1845, they would not have accepted the Bill of 1848.

The prayer of the Memorialist involves in it the alternative of superseding the execution of the Act of Parliament by allowing him to use his present waggons, or imposing upon the Company an obligation not warranted by law.

It is certain, as before stated, that if the object of the Act is to be accomplished, the present wretched waggons must be superseded by others of a better construction; and it is equally certain that the Company have neither the power nor the means to provide mineral waggons or trucks for Mr. Marsh or any other of the freighters. It may be a hard case for Mr. Marsh to be obliged to provide new waggons, which must of necessity involve much expense; but it is equally hard for the Company to be obliged to effect the improvements of their roads, and for the shareholders to receive diminished dividends.

The improvements of the roads, and the change of system in working them, will most undoubtedly afford greatly increased facilities for traffic to the freighters, and the advantages to be thus conferred upon them, and a consideration of the expense the Company will incur in providing them ought to reconcile them to the bearing of their share of the burden which a change of system and improvement of roads must naturally create.

The Company's capital and mortgages will be increased, before their works and improvements are completed, from 283,737*l.* to 630,000*l.*, whilst a diminution of tolls, to the amount of 25 per cent. has been made, and a limitation of dividend to 5 per cent. upon the capital invested for the ensuing 10 years is to be taken. Should the revenue afford the means of paying more, after which a further reduction in tolls of 25 per cent. is to be effected. This reduction of toll was the compensation the Legislature designed to give to the freighters; and I think you will concur in opinion with me, that it is indeed adequate and ample.

The Company have not been able at present to raise sufficient money to complete the works and alterations now in progress, and they cannot therefore consent to procure the means of purchasing any other things than those their Act imperatively requires them to provide.

Considering the position of the Company, and the difficulties they are placed in, the requirements of Mr. Marsh are ungenerous, if not unjust, and such as I am sure will not be sanctioned or approved of by your Honourable Board.

In conclusion, I would beg to suggest whether, in the circumstances under which the

Company and the district are placed, it would not be the better course for you to send down an Inspector to examine the roads, waggons, model tram, and works generally, for the purpose of supplying your Honourable Board with every information you desire in reference to the questions at issue.

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Capt. Harness, R.E.,
&c. &c.

I have, &c.,
R. RUSCOE.

P.S. I beg to forward to you herewith a letter addressed to me by Mr. Barber, the late engineer of the Canal Company, and the present mineral agent of Sir Charles Morgan, bart., one of the largest mineral proprietors in the district, and also a series of remarks upon the memorial of Mr. Marsh, and which I submit to you as a means of affording considerable information upon the question at issue.

I also send a drawing and section of the model waggon.

No. 1.

November 14, 1848.

THE Committee having had submitted to them, by their engineer, a model coal-tram or waggon, for use upon their tram or railways,

Resolved—That it be approved of as a model for the construction of all other coal-trams or waggons to be used upon the Company's roads on and after the 1st day of August, 1849, and that no coal-trams or waggons built or constructed on a different principle be allowed on and after that day to be used, it being essential to the interest of the Company, as well as of the freighters, and other persons using the Company's roads, that uniformity in design and construction be strictly enforced.

Resolved also—That a copy of the above resolution be transmitted to each of the freighters using the Company's roads.

No. 2.

Monmouthshire Railway and Canal Office,
Newport, December 16, 1848.

SIR,

On the fly-leaf hereof I beg to hand to you the copy of a resolution adopted at the last meeting of the Committee, with the view of obviating any misapprehension or error that might possibly have been entertained upon the subject-matter thereof, in consequence of the appointment and conference of the recent deputations.

I have, &c.,
R. RUSCOE.

Monmouthshire Railway and Canal Company.

THE Committee having received a report from the deputation appointed by them to meet a deputation from the freighters, on the subject of the waggon to be adopted for the conveyance of coal, and it appearing from such report that nothing the freighters proposed was calculated to induce the Committee to withdraw or deviate from the resolution entered into on the 14th day of November last, and communicated to the freighters:—

Resolved—That a circular be sent to each freighter, repeating and confirming that resolution, and that the same be again advertised.

DEAR RUSCOE,

Newport, February 24, 1849.

AGREEABLY to your wish, I send you herewith a few remarks in reply to the allegations of Mr. Marsh's Memorial to the Railway Board. The Rock Colliery, you are aware, is situate upon Sir Charles Morgan's property. The gateage Mr. Marsh pays Sir Charles Morgan is only 4d. per ton, the sleeping rent only 100l. per annum; while Mr. Prothero, on the other side of the hill, is paying Sir Charles 1s. 2d. per ton, and a sleeping rent of 1,050l. Mr. Marsh has therefore the advantage of 10d. per ton over Mr. Prothero, besides the great disparity of liabilities, and yet talks of being obliged to stop his works. Mr. Marsh's term has only about 15 years to run, and doubtless he would rather be saved the cost of providing waggons; but I should think the interests of the large mineral proprietors, and of the district generally are not to be thrown overboard by a perpetuation of the present system, as the retention of the present rubbishy waggons undoubtedly would be. You are taking a step in the right direction, and the advantage of an edge-rail will be so soon apparent upon the upper portions of your lines, that the proprietors of the branch-roads will ultimately see it their interest to co-operate with the Company in substituting the edge-rail for the tram-plate. As representing the mineral interests of the largest landowner in this county (Sir C. Morgan), if my testimony can be of any service before the Railway Commissioners, pray command me. I have Sir Charles's instructions to afford your Company every facility in his power. Sir C. Morgan is one of the proprietors of the branch-road (the Penllwyn) over which Mr. Marsh's coal travels—this is a single line. I heard the manager of this road (Mr. Beaumont) tell Mr. Powell the other day that their Company must alter the sidings and switches.

I have, &c.,

Ralph Ruscoe, Esq., Newport.

EDWARD SCOTT BARBER.

Newport, February 24, 1849.

REMARKS in reply to a Memorial addressed to the Railway Commissioners by Mr. Marsh, on the subject of the Monmouthshire Railway and Canal Company, requiring the traders on their roads to use an improved waggon under the powers of the Company's Act of 1845.

1. "That neither the railway from Newport to Pont-y-pool, nor the branches thereof, authorized to be made by the Act of 1845 have been completed."

Y

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 Monmouthshire
 Railway and Canal
 Company.

Mr. Marsh's colliery is situated in the Sirhowy Valley, and has no connexion whatever with the district of the Pontypool Railway or its branches. Instead of Mr. Marsh complaining of the non-completion of the Pontypool line, he ought to congratulate himself that the Company are spending their funds in improving their roads in his (Mr. Marsh's) district, and are preparing to become haulers by locomotive engines on these roads by the 1st of August next. The Company's charges for hauling after the 1st of August will be about one-half of the cost of the present system of horse hauling pursued by Mr. Marsh.

2. True it is the freighters have provided their own waggons, but a simple inspection of these waggons will convince any one that they are totally unfit to be hauled by locomotive engines. The present coal-waggons cost from 8*l.* to 10*l.* new; they are without springs, have bent axles, with small cast-iron wheels, with no brakes, and a system of *spragging* having been adopted, the wheels have as many sides as there are holes in the wheel, instead of being round. The present wheels are very narrow at the edge, and are most destructive to the Company's plates, by cutting a groove therein. The coal on these waggons is piled up above the side boards to a height nearly equal to the depth of the waggon, and if hauled by locomotive power, at a speed of 10 miles per hour, the coal would be shaken off, and the remainder so crushed as to be much injured for shipment. The coal in the Newport district cuts so large, that the crushing and deterioration for want of springs still admits of a good sample being shipped compared with other districts, and this accounts for the apathy of the coal-traders in not providing good waggons. The competition of the Taff Vale Railway and the Port of Cardiff has, however, fully convinced the principal coal-masters of Newport that their interests will be best secured by the adoption of similar waggons to those in use on the Taff Vale Railway, which cost from 50*l.* to 60*l.* each.

Already have several of the coal-masters commenced building waggons according to the Company's model, and contracts have been made with parties in the north for the supply of several hundreds by the 1st of August.

Mr. Marsh hauls entirely with horse power. The Committee of 1848 (Sir Robert Peel, chairman) very properly prohibited the use of horses upon the roads of the Company, and the Company are required to carry on the traffic on the modern railway system, excepting the providing waggons for iron and coal, which devolves upon the respective iron and coal masters, and which they expressed their readiness to furnish before the Parliamentary Committee.

As to the branch roads, all of course are of the same gauge as the Company's, but a considerable portion of them is laid with cast iron, and the cast-iron latches (switches) must be replaced by wrought-iron ones of proper form before they would be safe for the passage of locomotive engines.

3. The whole of the Monmouthshire Canal Company's roads travelled over by Mr. Marsh are laid with wrought-iron plates, 75 lbs. to the yard; the branch roads are laid partly with wrought iron and partly with cast iron.

4. The Company's waggon will travel on any of these branch roads except through the narrow cast-iron partings (or switches). The Company are taking up all their old cast-iron switches, and are substituting those of improved form, and it is presumed the owners of branch roads must do the same.

5. The tare of the waggon is the loss of the Monmouthshire Canal Company, as the Company have to haul the empty waggons back free of charge. The coal cannot be piled up in the present way (see former observation, 2). The present waggons would soon be destroyed if hauled by locomotive power.

So long as the wheels, axles, springs, and beds are adhered to, the Company are indifferent as to the body of the waggon.

6. The Company have, out of revenue, laid all their roads (excepting 2½ miles) with wrought-iron plates, 75 lbs. to the yard, principally upon sleepers, and it is confidently submitted that their roads are the best roads in the kingdom of *their kind*.

7. The Company are improving these. Sir C. Morgan, Sir B. Hall, and the landowners generally, are affording the Company every facility in this respect. The badness of the curves is the loss of the Company in friction. The gradients also are such that the Company must lose by hauling on portions of their roads; but all this is the gain of the freighters.

8. The absurdity of Mr. Marsh's position is here most apparent. He contends for the superior advantages of a railway, and yet when the Company are taking steps in the right direction towards the attainment of such an object, every difficulty is to be thrown in their way. Mr. Marsh had better at once candidly admit that he does not wish for any change; he thinks his waggons will last the term of his lease (some 15 years) and therefore the district is to stand still for his peculiar benefit.

9. The large sums expended by the Company from revenue, which they might have put in their pockets, is the best answer to this allegation.

10. The Company are restricted to a speed of 10 miles per hour, and double this could be attained with perfect safety when the improvements are completed. High speeds are not desirable for *coal* traffic.

11. (See No. 8.) The Company will be bound to haul all the coal Mr. Marsh will bring to their road, and will be the better pleased if he double his present quantity. Mr. Marsh will reach port considerably cheaper than he now does, and his coal will be in far better condition for shipment. The freighters have alleged, before the Parliamentary Committee of 1845, that they would save 1*s.* per ton by the use of railway waggons of proper construction, with springs; but the Company were *then* to provide the waggons; *now* that Parliament calls upon the freighters to provide their own waggons, these same men allege that they will be losers by an improved mode of transit for their minerals, although before Sir Robert Peel's Committee they expressed their desire to provide their own waggons.

12. Mr. Marsh is in the same position as other coal-masters who are far larger shippers than himself, and who are providing waggons of the required form—they pray for no relief; on the contrary, they are convinced of the facts I have stated.

There are great difficulties in the adoption of trucks for carrying the present coal-waggons; the centre of gravity will be high; the load will be so top-heavy as not to be safe; besides, the outer rail must be raised considerably on the sharp curves, and the coal would be thrown off by the rocking. The Company might as well be called upon to provide waggons as to provide trucks, and thus the intentions of Sir Robert Peel's Committee—viz., to relieve the Company from providing waggons—would be completely frustrated.

The present waggons are worth nothing to the Company but as old materials; they are the remnants of an old system which ought long ago to have been abolished, not only for the interest of the Monmouthshire Canal Company but for the much greater interest of the freighters themselves.

R. Ruscoe, Esq., Newport.

EDW. SCOTT BARBER.

SIR, *Office of Commissioners of Railways, Whitehall,* Appendix No. 74.
March 1, 1849. Monmouthshire
 Railway and Canal
 Company.

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of the statement of the Monmouthshire Railway and Canal Company, in reply to the complaint of Mr. Henry Marsh; and to inform you that, in compliance with the suggestion contained therein, an officer will be sent from this department to examine the roads, waggons, models, and the tram-works generally, for the purpose of supplying the Commissioners with full information upon the several matters referred to therein.

I have, &c.,

To the Secretary of the
 Monmouthshire Railway and Canal Company.

H. D. HARNESS,
 Capt. Royal Engineers.

SIR, *Office of Commissioners of Railways, Whitehall,*
March 1, 1849.

I HAVE been directed by the Commissioners of Railways to inform you, in reference to your letter of the 9th ultimo, transmitting a memorial relative to the Monmouthshire Railway and Canal Company, that they intend sending one of their officers to examine into and report upon the matters contained in that memorial; and that you will receive due notice of the time at which he will visit the line and examine the waggons.

I have, &c.,

Henry Marsh, Esq.,
 39, Grosvenor-place, Bath.

H. D. HARNESS,
 Capt. Royal Engineers.

SIR, *Abergavenny, March 13, 1849.*

As solicitors to a large body of the freighters on the roads of the above-named Company, we take the liberty of informing you that a memorial is in preparation, and will in a few days be presented by them to the Railway Commissioners, relative to certain matters in difference between them and the Company, and on the subject of which a memorial has already been presented by Henry Marsh, Esq., of Bath. Under these circumstances we (with Captain Marsh's approval) take the liberty of suggesting that Captain Simmons' visit to the district should be postponed until the memorial of the other freighters has been presented, that Captain Simmons may inquire into the grievances of all parties at the same time.

We have, &c.,

Capt. Harness, R.E.,
 &c. &c.

GABB AND SENETAW WOODHOUSE.

GENTLEMEN, *Office of Commissioners of Railways, Whitehall,*
March 14, 1849.

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 13th instant, relative to a memorial on the subject of the Monmouthshire Railway and Canal Company, and to inform you that they will call the attention of their inspecting officer to the memorial when presented; but that the subject has already been referred to Captain Simmons, who has been instructed to make such appointment for visiting the line as may suit the convenience of all parties, and be compatible with the arrangements made by him for the discharge of other public duties.

I have, &c.,

Messrs. Gabb and Woodhouse,
 Abergavenny.

H. D. HARNESS,
 Capt. Royal Engineers.

SIR, *Whitehall Place, March 28, 1849.*

I TAKE leave to introduce to you Messrs. Brown and Woodhouse, who are deputed by the freighters upon the Monmouthshire Canal and Railways to present to the Commissioners of Railways a Memorial upon the subject of a most important regulation which that Company are about to adopt in respect of a new description of waggon which threatens the most ruinous consequences to some parties who have embarked their capital in collieries upon their line of railways; I hope, without entering at present into further detail, the Commissioners of Railways will direct a competent engineer to proceed into Monmouthshire for the purpose of instituting an inquiry into the grievance of which the freighters so justly complain.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

W. THOMPSON.

Appendix No. 74.

**Monmouthshire
Railway and Canal
Company.**

TO THE COMMISSIONERS OF RAILWAYS, WHITEHALL.

In the matter of the Monmouthshire Railway and Canal Company.

The **MEMORIAL** of the undersigned persons, being freighters on the Tramroads, Railroads and Canals of the above-named Company.

THIS Company has been established upwards of half a century, having been incorporated by the name of "The Company of Proprietors of the Monmouthshire Canal Navigation, by an Act passed in the 32nd year of the reign of King George the Third, c. 102."

Under the powers of their Act of Incorporation, and of two subsequent Acts, viz., the 37 Geo. III., c. 100, and the 42 Geo. III., c. 115, the Company completed, amongst others, the works following, and which will be found marked on the accompanying map, viz. :—

A canal from the river Usk, at Newport, to a place called Pontnewynydd, a little above the town of Pontypool.

A railroad from the head of this canal at Pontnewynydd to Blaenavon Iron-works, and which is known as the Blaenavon Railroad.

A branch railroad from the last-mentioned railroad to the Varteg Iron-works, and which is known as the Cwm Frwyd Railroad, and two short branch roads from this canal, a little below the town of Pontypool; the one to Trosnant Furnace, and the other to Blaendare Furnaces.

The foregoing may be distinguished as the Eastern Valleys lines.

The Western Valleys lines comprise the works following, viz. :—

Another canal branching from the first near Newport, and extending to a place called Crumlin.

A tramroad extending from Newport to Risca-bridge, thence to Crumlin, thence to Pont Aberbyg, thence branching off to the right to Blaina and Cwm Celyn Iron-works, and to the left to Beaufort Iron-works, with another branch tramroad from Risca-bridge to a point called The Nine Mile Point.

Of this tramroad between Newport and Risca-bridge, one mile, called the Park Mile, passes through Tredegar Park, and is the property of Sir Charles Morgan, Baronet, and was made by his late grandfather Sir Charles Morgan, Baronet, under the powers of the Act of 42 Geo. III., already mentioned, which Act authorized the construction of a line of tramroad from Sirhowy Iron-works by Tredegar Iron-works to Newport, and incorporated another Company by the name of "The Sirhowy Tramroad Company," to construct so much of this line as extended from Sirhowy Iron-works to the Nine Mile Point, the late Sir Charles Morgan being thereby authorized to construct the Park Mile, and the Company of Proprietors of the Monmouthshire Canal Navigation being thereby authorized to construct the line between the Nine Mile Point and Newport, except the Park Mile.

At the time of the passing of this Act of 42 Geo. III., the works of this Company in the Western Valleys consisted of the Canal to Crumlin, with a tramroad from Crumlin to Beaufort Iron-works, and a railroad called the Rassa Railroad from Beaufort Iron-works to Sirhowy Iron-works.

The line from Crumlin to Beaufort Iron-works had originally been laid down as a railroad, but was subsequently altered by the Company into a tramroad, by taking up the edge rails and substituting tram-plates for them. The old railroad from Beaufort Iron-works to Sirhowy Iron-works, called the Rassa Railroad, was left in its original state as a railroad, its gradients being very unfavourable, and it being little used, except as a limestone road for the neighbouring works.

By the Act of 42 Geo. III. this Company was authorized to construct, in addition to the lines of tramroad between the Nine Mile Point and Newport, a branch line of tramroad from Risca-bridge to Crumlin.

Having constructed the last-mentioned branch line of tramroad from Risca-bridge to Crumlin, the Company sometime afterwards laid down the branch tramroad from Pont Aberbyg to Coal Brook Vale Iron-works.

Thus there was formed in the Western Valleys, after the passing of the Act of 42 Geo. III., and there has since been maintained up to the present time, an unbroken system of tramroad communication between Sirhowy Iron-works, Beaufort Iron-works, and Coal Brook Vale Iron-works, and numerous intermediate iron-works and collieries on the one hand, and their shipping place, Newport, on the other.

In connexion with these trunk lines of tramroad in the Western Valleys, various branch lines of tramroad, both public and private, have been from time to time formed, and are now in use; and some of your Memorialists have expended large sums of money in the formation of such branch lines, and in otherwise adapting and extending to their works and shipping places the system of tramroad communication so established in these Western Valleys.

Up to the present time the freighters on the Company's roads and branch lines have always provided their own carriages and motive power, some of them, the situation of whose works enabled them to do so, using locomotive steam-engines, whilst others whose works are connected with the Company's lines by branch roads not adapted to locomotive engines used horse power.

It will be seen by the accompanying map that in the Western Valleys an unbroken communication by tramroad extends the whole way from the different works to Newport.

In the Eastern Valleys the communication by railroad extends from the different works only to the canal, at and above the Pontypool, whence the canal forms the only communication to Newport.

In 1845, the Company obtained a new Act, the 8 and 9 Vict., c. 169, called "The Newport and Pontypool Railway Act, 1845," whereby they were authorized to construct a railway between Newport and the head of their canal above Pontypool.

By the 110th section of this Act, after reciting that the Company, at the request of the freighters on their existing railways (which by the interpretation clause, section 146, includes tramroads) had agreed to improve such railways so as to adapt them for the passage of locomotive steam-engines, and also to become carriers on such railways, as well as on the railway (meaning the new railway thereby authorized), in order thereby to afford increased facilities to trade and promote the public convenience, enacts, That the Company shall, and they are hereby required within three years after the passing of that Act (which period expired on the 1st of August, 1848), to improve their existing railways wherever that might be necessary to adapt them for the convenient passage of locomotive steam-engines for the carriage of goods and merchandize at reasonable rates of speed, and to provide and maintain such and so many carriages and locomotive steam-engines and other moving power as might be necessary for the carriage of passengers, animals, and goods, which might be conveyed to their railways, and which they might be required to carry thereon; and such carriages and locomotive steam-engines and other moving power as might be required should be provided and furnished by the Company at reasonable times for the accommodation and convenience of the public, and all necessary facilities should be afforded by the Company, as well for conveying passengers, animals, and goods along their railways, as for taking passengers, animals, and goods to and from the same; but the Company should not be required, by reason of anything in that Act contained, to alter or become carriers on the Rassa or the Cwm Frwyd Railroads, the gradients whereof could not be adapted to the passage of steam-engines.

Section 112 of this Act limits the rate of speed with locomotive power on the existing railways of the Company to not exceeding 10 miles an hour.

Section 128 enacts, That the Company should, and they are thereby required to carry, as common carriers, for hire, on their existing railways, within three years after the passing of that Act, and also on the railway when and so soon as the same should be open for traffic, by means of locomotive steam-engines, or other moving power, in their own carriages, and in the carriages of other persons, all passengers, animals, and goods which might be brought to their railways, and which they might be required to convey thereon, and the Company should afford to all persons conveying or sending goods upon their railways every reasonable convenience and facility for loading and unloading goods upon and from the carriages, whether their own or those of the Company, at the several stations or other places for delivering or receiving such goods, without giving any preference or priority to one person over another in the time or manner of loading, unloading, receiving, conveying, or delivering such goods.

Under the provisions of the last-mentioned Act it was in the option of the freighters to call upon the Company to provide carriages and motive power, or either for their use, or to provide both, or either of these, for themselves, and either by means of locomotive engines or horse power, as they had previously done.

In 1848, however, the Company again went to Parliament and obtained a further Act, the 11 and 12 Vict., c. 120, called "The Newport and Pontypool Railway Act Amendment Act, 1848."

By this Act (sec. 3) they changed their corporate name from "The Company of Proprietors of the Monmouthshire Canal Navigation" to their present name of "The Monmouthshire Railway and Canal Company," and (by sec. 9) obtained an extension of time for the improvement of their existing railways to the 1st of August, 1849.

By sec. 12, the Company were released from the duty which they had assumed by the Act of 1845, of providing mineral carriages for the freighters, if required so to do by them.

And, by sec. 13, after the 1st of August, 1849, the use of horse-power on the Company's roads (except the Rassa, Cwm Frwyd, and Blaendare-roads) is altogether prohibited, as is also the use of all locomotive power for propelling waggons or carriages on any of the Company's roads, on which, by the Act of 1845, they were bound to become carriers, except such locomotive power as shall be provided by or for the Company or shall be used thereon with their consent; but this last-mentioned section also enacts, that the Company shall, and they are thereby required to supply proper engines for the conveyance of the traffic along such last-mentioned roads, and to lead therewith along the same, the mineral carriages, trucks, and waggons of all persons requiring them so to do.

Thus, under the provisions of the last-mentioned Act, the Company were not only released from the obligation of providing mineral carriages for the freighters, but at the same time acquired the exclusive right of providing, on and after the 1st of August, 1849, the motive power to be used on their roads, on which their obligation of becoming carriers thenceforth attached.

Under this state of circumstances the Company, in the month of November, 1848, circulated amongst the freighters, a resolution of which the following is a copy:—

*Monmouthshire Railway and Canal Company,
November 14, 1848.*

"THE Committee having had submitted to them, by their engineer, a model coal tram or waggon for use upon their tram or railways,

"Resolved, that it be approved of as a model for the construction of all other coal trains or waggons to be used upon the Company's roads, on and after the first day of August, 1849, and that no coal-trams or waggons built or constructed on a different principle be allowed, on and after that day, to be used, it being essential to the interest of the Company, as well as of the

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freighters and other persons using the Company's roads, that uniformity in design and construction be strictly enforced.

"Resolved also, that a copy of the above resolution be transmitted to each of the freighters using the Company's roads."

This circular was the occasion of much surprise and anxiety to your Memorialists, and led to several meetings and conferences between them, which resulted in their determining (after a fruitless appeal to the Company to induce them to rescind or modify their foregoing resolution) to take the opinion of counsel as to the legal right of the Company to carry such resolution into effect. After considerable, though necessary delay, the opinion of counsel was obtained, and your Memorialists having been thereby advised that the resolution which the Company had passed was "wholly and clearly illegal and void;" further deliberation became necessary amongst them, as to the course it would be best for them to adopt, whether to remain passive until the 1st of August, 1849, and then to treat the resolution as, what they are advised it is, a mere nullity; which course, if adopted by your Memorialist and resisted by the Company, must result in the most disastrous litigation between the parties, involving to your Memorialists, on the one hand, the total stoppage of the means of transit of their produce to its shipping port, and to the Company the consequences to your Memorialists of such stoppage, as well as the withdrawal of that traffic from their lines; or whether it would not be more proper for your Memorialists to put themselves into communication with your Honourable Board, with a view to its amicable interference in a matter the decision of which, in a court of law, must necessarily be attended with such serious and ruinous results, not only to each of the contending parties, but also to the densely populated district in which their respective works are situate.

Your Memorialists thereupon determined, by adopting the latter course, to endeavour to effect an amicable adjustment of their differences with the Company before taking the necessary steps for contesting those differences in a court of law, and hence the present Memorial to your Honourable Board, and hence the delay which has attended its presentation.

The model waggon referred to in the foregoing resolution is objected to by your Memorialists for various reasons.

It is utterly impracticable to adapt to the model waggon the waggons of your Memorialists at present in use on the Company's roads, and which have been constructed in conformity with the Company's previous requirements in this respect, or have at all events been so used with their sanction, and thus the whole stock of the waggons at present belonging to your Memorialists, amounting in value to many thousands of pounds, would be sacrificed, and your Memorialists would be subjected to an expenditure of many thousand pounds more in providing an entirely new stock of waggons in the place of their present stock.

Some of your Memorialists have not the necessary capital to meet such an expenditure, and to these the foregoing resolution of the Company, if enforced, would have the effect of wholly shutting up their works, whilst to others of your Memorialists they are so circumstanced that the limited duration of their leases, as well as the limited extent of their coal-fields remaining unworked, would not justify the outlay which the foregoing resolution involves.

To some of your Memorialists the prohibiting the use of their present waggons on the Company's roads is the more uncalled for, inasmuch as that these waggons, although not constructed in conformity with the Company's model waggon, are nevertheless well suited for use on such roads, and to be propelled thereon by locomotive steam-engines, and have been for many years, and are now so propelled thereon, without ever having been objected to, and although not at present made to buff, which is one of the requirements of the model waggon, this is an addition to them which your Memorialists are ready to make if required.

Others of your Memorialists whose present waggons have hitherto been drawn by horse power, join the Company's roads by public branch lines, some several miles in length, and belonging to other persons, and which branch lines cannot be used except by horse traction. The model waggon of the Company could not be drawn along these branch lines, its weight being too great for horse power up their gradients, and its front and hind wheels being too far apart to round their curves, and its size not admitting of its passing through a tunnel on one of them. The consequences, therefore, to these your Memorialists of the foregoing resolution of the Company, if enforced, would be to place them in this dilemma, that whilst their present waggons would be prohibited from passing on the Company's lines, the model waggon would not be used on these branch lines; and thus, the only means of continuing their traffic would be, by having two sets of waggons, one for the Company's lines, and another for the branch lines, and by shifting the loads from the one to the other at the point of junction, which would require an area of ground and accommodation works for the purpose at such point of junction which your Memorialists do not at present possess, and have not the power of acquiring; besides, that the expense which such a shifting of the loads would entail, and the injury which the coal would sustain thereby, would be such as to preclude your Memorialists from carrying on their collieries, except at a positive loss.

The objections to the model waggon arising from great its weight, and the distance at which its front and hind wheels are apart, apply not only to such of your Memorialists as join the Company's road from public branch lines, but to other of your Memorialists also. They, too, have to join the Company's lines by private occupation-roads, of necessarily severe gradients and sharp curves, connecting the Company's lines with their works at the one end, and with their wharves and shipping places at the other. The Company cannot be required to provide motive power off their own lines; and the traction of the carriages along these occupation-roads will still have to be effected by your Memorialists with horse power. The weight of the model

carriage, and its inaptness to round sharp curves, thus present most serious objections to its traction along these private occupation-roads, objections, too, which, as regards the gradients and curves of these roads between the Company's lines and the works of your Memorialists, could be very little, if at all overcome by any improvements which their natural position would admit of, and which, as regards the connexions with their wharves and shipping places, could be so only by an entire alteration of the latter, at a most serious expense to your Memorialists.

Another objection of your Memorialists to the model carriage is the unusual and unnecessarily expensive construction of its wheels, which unite the double character of a wheel for running either on an edge rail or in a tram-plate.

Those of your Memorialists whose works lie in the Western Valleys, where an universal and exclusive system of tramroad communication prevails, protest against the unnecessary extra expense of this wheel, caused by its railroad adaptations, whilst your Memorialists in the Eastern Valleys, in which a system of railroad communication exists, feel equally aggrieved on their parts by the extra expense of the tramroad properties of this combined wheel.

The motive which it is understood the Company assigns for prescribing this combined wheel is, that they intend gradually converting their Western Valleys lines, from tramroads into railroads, and the combined wheel is intended to suit their state of transition without interrupting the traffic; but your Memorialists believe, and are so advised by their counsel, that the Company have no power so to convert their Western Valleys lines; and should they attempt it, your Memorialists are informed that the owners of some of the principal branch public tramroads connected therewith are prepared to take immediate legal steps to prevent such conversion.

The total length of the Company's lines in the Western Valleys amounts to about 46 miles, whilst that of the public branch lines in connexion therewith exceeds 54 miles; and that of the private branch occupation-roads amounts to many miles more, say at least 35 miles.

It will be observed, that the foregoing resolution of the Company applies to all their roads, without any exception. Thus the use of this model waggon with its combined wheel is prescribed on and after the 1st of August, 1849, not only on the Western Valleys lines, but also on the Eastern Valleys lines, which, with one or two immaterial exceptions, are and always have been, and are intended to be, continued as railroads; and where, therefore, there is not, and cannot be any pretence whatever for the use of the combined wheel, but above all, the resolution extends even to the Cwm Frwyd Railroad, which (with the Rassa-road) the Company by their Act of 1845 exempted themselves from the obligation of improving or carrying upon, and which accordingly remains unimproved, and being about three miles in length, and with gradients insurmountable by locomotive steam-engines, will be continued to be used by horse power provided by the freighters as heretofore. Upon some of the Eastern Valleys lines, too—for example, the Blaenavon Railroad—on which the Company is also required to provide the tractive power with locomotive steam-engines from and after the 1st of August, 1849, there are gradients of 1 in 53, whilst those of the branch lines leading thereto are still more severe. The curves on these lines are equally objectionable.

Why, therefore, the Company should prescribe the use of this ponderous waggon on the Cwm Frwyd-road up which the freighters cannot drag it with horses, or upon the Blaenavon-road, up which the Company themselves will be scarcely able to drag it with locomotive steam-engines, your Memorialists cannot at all guess, and they must feel that, in passing the resolution referred to, the Company have legislated very hastily and inconsiderately, or if they did not mean their resolution to apply to the Eastern Valleys lines, then at least very loosely, in a matter of such vast importance not only to your Memorialists but also to themselves.

Although your Memorialists, as a matter of convenience to your Honourable Board as well as to themselves, have united in stating their respective cases in one common Memorial, they would nevertheless desire to be understood with reference to the measure of relief for which they respectively seek, as severally confining their applications to their own particular cases.

The relief, then, which your Memorialists respectively seek through your Honourable Board is as follows:—

That such of your Memorialists as have coal-waggons which have hitherto been, and now are, propelled by locomotive steam-engines on the Company's roads, and which are on springs, and except that they do not at present buff, are fully adapted to be so propelled at the maximum rate of speed permitted on the Company's lines, may be allowed the continued use of their waggons on the Company's lines, such waggons being made to buff, should this be required by your Honourable Board.

Your Memorialists are prepared to prove to your Honourable Board that the Company may provide the necessary tractive power by locomotive steam-engines for their waggons quite within the rates which they are authorized to charge for the same.

That such of your Memorialists as have coal-waggons which have hitherto been and now are drawn by horse power may, instead of having all their waggons sacrificed at one blow, be allowed the continued use of them on the Company's roads until they can be gradually replaced by others of a better description, which at all events shall be effected within two years from the 1st day of August, 1849.

These waggons have to travel over the very best part of the Company's roads, as to curves and gradients, and principally join them from branch lines, and might be conveyed by separate trains at a moderate rate of speed with very little, if any, inconvenience, and without any loss to the Company.

That any new coal-waggons which the Company may afterwards require to be used on their lines in substitution for those now drawn by horses, or which they may require to be used by parties having no other stock of waggons, shall be constructed with a due regard to their con-

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venient use, not only on the Company's lines, but on the several branch roads in connexion therewith, and with wheels simply suited to the road on which they are intended for use, either tramroad or railroad, as the case may be.

Your Memorialists have, with eminent engineering assistance, had a model coal-waggon constructed, and which is adapted for use, as well on the Company's lines as on the several branch lines in connexion therewith; and your Memorialists respectfully offer this waggon as a model for those to be substituted as before proposed for the waggons now drawn by horse power, or to be used by parties having no other stock.

The model waggon of your Memorialists weighs 2 tons, carries 5 tons, and costs 32*l.*; whilst the model waggon of the Company weighs 2 tons 19 cwt., carries 5 tons, and costs 60*l.*

Your Memorialists, therefore, respectfully pray your Honourable Board so to interpose your authority with the Monmouthshire Railway and Canal Company as to obtain for your Memorialists the relief in the premises for which they respectively seek, rather than that they should be driven to resort for this to a course of protracted and disastrous litigation; and that to this end you may be pleased to send down your inspecting officer to examine into the several matters of this Memorial, and to inspect the Company's works, and especially the whole of their lines of road, and the different branch lines and shipping places connected therewith, together with the different waggons of your Memorialists now in use, and their model waggon, as well as that of the Company.

W. THOMPSON, *Whitehall-place, London.*

SAMUEL HOMPAY, *on behalf of Tredegar Iron and Coal Company.*

W. S. CARTWRIGHT, *Colliery Proprietor.*

JOHN RUSSELL, *Colliery Proprietor.*

JOSEPH LATCH and Co., *Colliery Proprietors.*

CARR and Co., *Colliery Proprietors, per M. Morrison.*

RICH. JOHNSON, *for the Blaenavon Iron and Coal Company.*

FRANCIS ADAMS, *Colliery Proprietor.*

WILLIAM WILLIAMS and Co., *Pentwyn Iron-works.*

CRUTHWELL, ALLIES, and Co., *Cwm Celyn and Blaena Iron-works.*

The EBBW VALE COMPANY, *Ebbw Vale and Sirhowy Iron and Coal-works.*

ROGER LEWIS, *Colliery Proprietor.*

JOSEPH JONES, *Colliery Proprietor.*

The RHYMNEY IRON COMPANY, *per T. E. Scudamore, Secretary.*

March 28, 1849.

TO THE COMMISSIONERS OF RAILWAYS.

The Monmouthshire Railway and Canal Company.

The further MEMORIAL of Henry Marsh, in reply to the Company's Answer to his former Memorial,

SHEWETH,

THAT in his former Memorial to your Honourable Board, your Memorialist had desired to have dealt with the matter now in difference between the Company and himself, without reference to past disputes between them and to the Parliamentary contests in which these disputes have resulted.

Reference having, however, been made to these in the answer given by the Company to the previous Memorial of your Memorialist, he feels it due to himself to offer to your Honourable Board the few explanatory observations following:—

The Company have for nearly half a century enjoyed almost a monopoly of the means of transit of the mineral traffic of the district intersected by their lines, and during a period of 28 years preceding the year 1846, their dividends have averaged above 10 per cent., and have amounted in some of those years to 12 per cent. In addition to these dividends, they, at the same time, capitalized out of tolls, and expended in extending their works, a sum of 100,000*l.*, being nearly one-half the amount of their original capital of 240,900*l.*

The excessive tolls exacted by the Company to produce these large returns, together with the very inferior means of transit which at the same time their works provided, were subjects of constant complaint by the freighters, who, accordingly, about the year 1843, projected a rival line of railway to relieve themselves from what they felt to be an oppressive monopoly on the part of the Company.

Shortly prior to the Company's Act of 1845, the freighters' project of a rival line, which had been temporarily suspended, was revived; and that Act, with the reduced tolls and improved means of transit which it promised, were the considerations which the freighters received for abandoning such rival line.

Many of the provisions of that Act, but especially those relating to its road tolls, were severely contested between the Freighters and the Company, who sought for higher road tolls than Parliament thought right to grant them. The tolls for providing motive power and carriages were not, however, at all opposed; and those granted by the Act of 1845 were the same which the Company themselves then asked for.

The Company not only accepted this Act, but shortly after obtaining it: they sold the powers it conferred, together with their whole undertaking, to another Company, at a sum equal to

about double the price of their original 100*l.* shares, and obtained payment of a deposit of 20,000*l.* on account of the purchase money. The panic which shortly afterwards occurred in the railway world disabled the purchasers from completing the purchase within the period specified, whereupon the Company annulled the contract, and declared the 20,000*l.* deposit forfeited, and transferred the whole of that sum to their treasury.

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Meanwhile a considerable portion had expired of the three years limited by the Act of 1845, as the period within which the Company were to put the freighters in the enjoyment of the improvements and advantages thereby provided for them, but instead of fulfilling the obligations which they had assumed by their Act of 1845, the Company gave notice of their intention of again going to Parliament to get released from these obligations.

Another severe Parliamentary contest between the Company and their freighters, followed by the Company's last Act of 1848, was the result.

After the Company's own case had been opened, and partially heard in Committee in the Commons, and before that of their opponents was gone into, a proposition was made by the Chairman of the Committee (Sir Robert Peel) for the consideration of both parties.

One of the terms of that proposition was a limitation of the future dividends of the Company to 5 per cent., as to which Sir Robert Peel expressed himself in the following words:—"And we think it just to impose that limitation upon the profits of the Company, because they are responsible for a great many laches and acts of negligence."

This led to certain proposals from the freighters to the Company, who having urged before the Committee their want of the necessary capital to provide waggons for the freighters, the latter, in order to relieve them in this respect, submitted by these proposals that the Company's obligation to provide such waggons should be repealed; but this was only one of several proposals, which, as a whole, were rejected by the Company, and were only partially adopted by the Committee when they ultimately dictated the terms of the Act of 1848.

In submitting to this concession for the Company's relief, it is certain that the freighters never contemplated the return for it, which the Company now propose to them in their resolution of the 14th November last.

The Company allege that some of the leading freighters approve of, and are ready to adopt, their model waggon.

This may be the case as regards two of the leading freighters, Messrs. Protheroe and Powell, who are also active and influential members of the Company's Committee; but if the infliction of the Company's model waggon upon the smaller freighters will have the effect, as your Memorialist contends it will, of crushing them and shutting up their works, then the monopoly of the trade which the larger freighters will thus acquire will amply repay the latter for any expense or sacrifice which the adoption of the Company's model waggon will involve.

Besides the two gentlemen named, your Memorialist is not aware of any other freighters who approve of the Company's model waggon, with the exception of the proprietors of a newly opened colliery called the Abercaine Colliery, whose present stock of waggons is of very trifling amount, and whose traffic has to pass over about 10 miles, and these the very best portion, as to curves and gradients, of the Company's lines.

The Company seem to argue that inasmuch as they have to provide motive power, they are the only parties who would have a right to complain of any disadvantages arising from the tare of the model waggon, or from the difficulty of propelling it up steep gradients or round sharp curves, thus apparently forgetting that all these objections apply with still greater force when the waggon leaves their own roads, chiefly occupying the lower and easier parts of the valleys, for the branch lines chiefly occupying the higher parts thereof, and on which the freighters, and not the Company, have to provide the tractive power.

In the Company's answer to your Memorialist's previous Memorial, there are many allegations of which your Memorialist cannot admit the accuracy, but which may be better inquired into by your Inspecting Officer when he visits the district in which the Company's works are situate.

Meanwhile, with respect to the report of Mr. Edmund Scott Barber, which the Company have called in aid of, and have adopted as a part of their answer your Memorialist will content himself with observing, that this gentleman having acted as the engineer of the freighters, and as one of their most active and zealous assistants in obtaining the reduced tolls and other advantages which they gained in their Parliamentary contest with the Company in 1845, afterwards became the engineer of the Company, and was equally active and zealous in assisting them against the freighters in depriving them of those advantages in their last Parliamentary struggle in 1848; your Memorialist therefore feels that the Company would have displayed more candour, and Mr. Barber better taste, had they furnished your Honourable Board with an engineering opinion less likely to be biassed by previous impressions than must be that of a gentleman who has taken so prominent a part in the controversies between the freighters and the Company, first on the one side and then on the other, and with equal zeal towards both.

HENRY MARSH.

March 27, 1849.

Rock Colliery, near Newport, Monmouthshire.

SIR,

Whitehall, April 19, 1849.

I HAVE to report, for the information of the Commissioners of Railways, that in compliance with their Minute of the 1st March, I communicated with Mr. Marsh and with the Secretary of the Monmouthshire Railway and Canal Company, and appointed the 20th ultimo to proceed with the inquiry at Newport into the various matters referred to by their Minute;

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but having then been informed that another memorial from other freighters and persons interested in the same questions was in course of preparation and about to be presented to the Commissioners, I, with the concurrence of the parties interested, and of the Railway Company, postponed the inquiry until such memorial might have been received, and which having been referred to me on the 28th March, I again communicated with the various parties, and commenced the "inquiry and examination of the roads, waggons, models, and tram-works generally, for the purpose of supplying the Board with full information" on the 2nd instant, having been occupied thereon up to the present time.

It appears that the Railway Company were incorporated originally in 1792 (32 Geo. III., c. 102), as the "Company of the Proprietors of the Monmouthshire Canal Navigation," with powers to make a canal from Pontnewynydd into the River Usk at or near the town of Newport, with a branch canal from the same to Crumlin-bridge; and also to make and maintain "*a rail or waggon-way or stone road* for the conveyance of iron, ironstone, iron ores, &c., in carriages or vehicles properly constructed for that purpose" from Pontnewynydd to the iron-works at Blaenafon; and also like *rail or waggon-ways or stone roads* from the canal near Ponty-moel to the Blaen Dir and Trosnant Furnaces, and from Crumlin-bridge to the iron-works established at Beaufort, and from Aberbeeg to Nant-y-Glo, and from the last-mentioned rail or waggon way to the Sorway Furnaces; and they were further empowered to make any other rail or waggon-ways from either of the before-mentioned canals, rail, or waggon-ways, to any other iron-works, limestone quarries, or coal-mines, already or hereafter to be established within the distance of eight miles from any or either of them.

Power was also given by the same Act to owners of mines, iron-works, &c., to make like railways to a similar distance of eight miles in case the Company refuse so to do.

By a subsequent Act of the 4th July, 1797. (37 Geo. III., c. 100), powers were given to raise additional capital, and also to extend the canal further in the present town of Newport.

In 1802 another Act (42 Geo. III., c. 115) was obtained, empowering the canal proprietors to make a *railway or tram-road* from the Nine Mile Point to communicate with the Monmouthshire Canal Navigation and the River Usk, at or near the town of Newport, with the exception of a portion about a mile in length, now known as the *Park Mile*, which by the same Act Sir C. Morgan was required to make and maintain, receiving the tolls arising therefrom; the Company were likewise empowered to make a like railway or tram-road, branching from the last mentioned, near Risca, to communicate with the railway at Crumlin, constructed under the previous Acts, and also a branch in the town of Newport. By the same Act another Company was incorporated, under the title of the Sirhowy Tram-road Company, with powers to make and maintain a railway or tram-road from the Sirhowy furnaces, along by the Tredegar iron-works to the Nine Mile Point, and thus to communicate with the canal and the River Usk, at or near the town of Newport.

Under these various Acts a system of tram-roads has sprung up, of which some are in connexion with the canal at or near Pontypool, and the remainder converge into what may be called the main line of tram-road from Crumlin to Newport, which with the exception of the Park Mile (belonging to C. Morgan) is the property of the proprietors of the Monmouthshire Canal Navigation. The former of these, or the Eastern Valleys lines, connected with the canal at or near Pontypool, are constructed with a gauge of 3 feet 4 inches. The latter are constructed with tram-plates laid to a gauge of 4 feet 4 inches, and have hitherto been worked over by a rolling stock, entirely the property of private individuals, and mining or iron-companies, drawn either by horses or locomotive power, also private property, the Canal Company, and other owners of roads receiving tolls for the use of the roads, but providing neither motive power nor rolling stock.

The various tram-ways have, in many instances, been used as high roads, and villages have been erected along them, having no other roads of communication, even from house to house; and in the town of Newport good houses have been built with no means of access to any public road except across the tram-road. Other inconveniences have also arisen from this state of things, which must be productive of great danger when a faster traffic by locomotive power is brought into use, such as level crossings, some of which are of the most dangerous and objectionable nature, both in town and country.

Added to this, a large and useless outlay has been caused by the multiplication of lines, in some cases threefold beyond what was necessary for the public welfare, and private interests have arisen in connexion with them which are difficult to reconcile. With this state of things the Company of Proprietors of the Canal Navigation obtained, in 1845 (8 and 9 Vict., c. 169), an Act authorizing them to construct a railway from Newport to Pont-y-Moyle, with a branch to the docks at Newport, and other branches extending short distances up the Eastern Valley towards Blaenafon; the whole of these works to be completed by the 1st August, 1848, or within three years from the passing of the Act.

By the same Act the Company were required within the same time (1st August, 1848) to improve their *existing railways*, wherever it may be necessary so as to adapt them for the convenient passage of locomotive steam-engines for the carriage of goods and merchandize at reasonable rates of speed, and to provide such and so many carriages and locomotive steam-engines and other moving power as may be necessary for the carriage of passengers, animals, and goods, which may be conveyed to their railways, and which they may be required to carry thereon; but they were especially exempted from these obligations with respect to two of their branch roads, known as the Rassa and Cwm Frwyd Railroads, on account of their gradients; and it was further enacted, that the Park Mile before described as belonging to Sir C. Morgan, being part of an unbroken line of communication by tramroad from Sirhowy to Newport, should be similarly improved, and that the speed upon these existing railways of the Company should not exceed the rate of 10 miles per hour. A power was also given to the canal pro-

prietors, whereby for the promotion of the public convenience they could purchase all canals, tramroads, and railways communicating with those belonging to them, and whereby they could raise capital for this purpose.

In 1848 an Act (11 and 12 Vict., c. 120) was obtained, by which the name of the Company was changed to the "Monmouthshire Railway and Canal Company," and they were exempted from finding waggons and carriages, except for passengers, and a certain class of goods and merchandize, not including either coal, iron ore, iron, lead, &c., which duty consequently devolved upon the freighters and others for whom such minerals or articles were conveyed upon their railways.

It was also enacted, that after the 1st August, 1849, no animals shall go or travel upon any railway or tram-road of the Company, except the Rassau, Cwm Frwyd, and Blaendare-roads; and that no locomotive power shall be used, except such as shall be provided by or for the Canal Company, or shall be used thereon with their consent; and the Company are required to provide locomotive engines, and to lead therewith along their railways or tramroads the mineral carriages, trucks, and waggons of all persons requiring them so to do.

By these Acts the present tramroads are to be so improved as to become adapted to locomotive power, and on the 1st August, 1849, they will cease to be used as public roads, upon which, as heretofore, every person could travel by horse power, and also convey their goods by the same means upon payment of toll; and the Company obtain entire control, and will be obliged to convey passengers and goods at rates not exceeding 10 miles per hour, providing motive power for all, but not waggons and carriages, which for certain descriptions of traffic are to be provided by the freighters.

In pursuance of these powers, the Company have commenced the improvement of their roads by laying a superior description of tram-plate, better adapted for carrying heavy weights and locomotive engines; and having it in contemplation eventually to convert their tramroads into edge railways, the Directors, in November last, came to a resolution approving a model coal-tram or waggon for use upon their tram and railways, and that no coal-trams or waggons built or constructed on a different principle should be allowed on and after the 1st August, 1849, to be used, it being essential to the interest of the Company, as well as of the freighters and other persons using the Company's roads, that uniformity in design and construction be strictly enforced. This resolution was circulated among the freighters, and afterwards confirmed by a subsequent circular of the 16th December, 1848, after the Directors had, upon representation by the freighters, reconsidered the subject. The model waggon, a drawing of which is annexed, is, as far as the body is concerned, of a common and well-approved pattern, the peculiarity consisting in the wheels, which are so contrived as to be adapted either to travel upon a tram-road of the gauge of 4 feet 4 inches, or upon an edge railway of the gauge of 4 feet 8½ inches.

This combination in the wheel was intended by the engineer to facilitate the introduction of the edge-rail, which he intended to lay continuously with the tram-plate, the wheels running upon either, and from one to the other without difficulty; and thus affording an opportunity of renewing the tram-plates with edge-rails as they become worn, or as the Company may find it convenient to make the change.

This resolution of the Company, therefore, entailed an entire abandonment of the present rolling stock upon the Company's roads by the freighters, and that they should be provided with stock of a new design and construction on the 1st August, 1849, on which day by their Act the Company are to provide power and become carriers, the freighters supplying waggons for all minerals, &c. In consequence of this, as they consider too sudden a change, the freighters memorialized the Commissioners, stating that the model waggon was ill adapted for use upon the private branch roads connected with the Canal Company's roads, and along which they have hitherto enjoyed an unbroken line of communication from the collieries and works to Newport; that they are not suited to the present arrangements for shipping; and that the tare or unserviceable load, as compared with the useful load, being much greater than with their present waggons, it would not be in their power to convey these waggons along the private branch roads upon which they must continue to provide their own motive power at a remunerative rate.

In the course of the inquiry I ascertained that they all concurred in the opinion that the introduction of the edge-rail into the district, provided it could be done with due regard to existing interests, would be of great advantage; and if this is to be done, I need scarcely remark, that the premises upon which the resolution of the Committee of Directors is formed are fully borne out, and that it is essential to the interest of the Company and of all persons using the Company's roads that *uniformity* in design and construction be strictly enforced, at least as regards important points, such being necessary to prevent accidents, and lessen the wear and tear upon the waggons; and the enforcement of such a rule by the Canal Company, who possess that part of the railway immediately connected with the shipping port, being as it were the key to the whole district, must be most beneficial. It would appear, therefore, that the end desired by all the parties connected with or using the railway is the same, the difference between them being as to the method by which the present system of tramroads can be changed so as to produce the least amount of inconvenience and loss to all parties.

The interests involved are very great, and in many cases so important to some of the parties, as to involve the question of whether they are to continue their present works or not; and, therefore, of vital importance to the number of labourers and others whom they employ.

The Canal Company possess at present no rolling stock beyond a few locomotive engines, made or ordered in readiness to enable them to become haulers on 1st August ensuing; but are required to improve their roads, receiving a limited toll for the use thereof, and to provide power at a certain limited rate per ton per mile, but not waggons for the principal portion of their traffic, upon which the prosperity of the whole district and of the town of Newport

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depends, namely, the conveyance of such minerals and manufactured iron as are either raised in or imported into the district.

The roads belonging to the Company are in the accompanying plan coloured red; but as those connected with the canal at or near Pontypool are on a narrower gauge, and the railway from Newport to Pontypool is not yet made, but in course of construction as a modern railway, there having been hitherto only a canal communication in the lower portion of this valley, the question between the freighters and Canal Company is for the present confined to the roads in the Western Valleys communicating with the Company's tramroad, leading from the west into the town of Newport; and I shall therefore confine myself to these latter roads, merely remarking that, taking warning by what has occurred with respect to these, it would be well if the Company were to mature their plans as regards the Eastern Valleys, and make known, with as little delay as possible, their intention in regard to them, in order that the freighters in that district may have ample time to take measures for any changes which may be consequent on the introduction of a new gauge and system.

The extent of lines in the Western Valleys belonging to the Railway Company is as follows:—

	Miles.
From the Canal Dock in the town of Newport to the Nine Mile Point, exclusive of the Park Mile, the property of Sir C. Morgan: ruling gradient 1 in 176; very tortuous, with curves of radii from 5 chains upwards	8
From Risca Junction to Pont Aberbeeg Junction: ruling gradient 1 in 106; line generally curved, with radii from 4 chains upwards	9
From Pont Aberbeeg to Coalbrook Vale Iron-works: ruling gradient 1 in 56; curves of the same nature	5½
From Pont Aberbeeg to Beaufort Iron-works: ruling gradient 1 in 75; with similar curves	6½
From Corty-Bella Junction, a branch in the town of Newport, nearly level	1
Total	29¾ miles,

(of which about 14 are laid with a single line of way,) which the Company are bound to improve and adapt for locomotive traction, and upon which they are required to carry passengers. This does not include several shorter branches towards wharves, and a branch along the bank of the canal, all in the town of Newport, which may be considered as accommodation works to other short branch-roads belonging to other parties, for the convenience of the trade at the different wharves situated along the bank of the river. The whole of these lines are at present laid with tram-plates to a gauge of 4 feet 4 inches, and are worked by horse and locomotive power, not supplied, however, by the "Railway and Canal Company." The Company have, to a very considerable extent, relaid the lines with a better description of tram-plate than heretofore existed, and of sufficient strength for the passage of locomotives at moderate speeds; and I was informed by them, that they propose to relay entirely with the edge-rail in the space of 18 months.

The lines are generally very tortuous, but many of the curves have been improved, and many more are capable of improvement. None, or only a very small portion of the line, is as yet fenced off from the adjoining property; in which operation much difficulty will be experienced on account of the rows of houses, forming villages, which have been erected along the side of the tramroads, having no other means of access to them. At one place, Pie Corner, I observed that a block of some 12 or 15 houses had been erected on a small plot of ground entirely surrounded on all sides by the railway, having a level crossing of a turnpike-road close adjoining. This would be highly objectionable at any place, but more especially so at a junction with another railway, the property of another Company. In the town of Newport, as will be seen by the accompanying sketch, the lines of tramroad have actually become the streets of the town, and several other streets are crossed on the level by branches close to one another, in a manner perfectly incompatible with safety, even if the houses could be fenced off entirely, which would seem almost impossible.

Many other conditions consequent on the present system of tramroad have arisen, which upon its conversion into a railway would be most objectionable; but I forbear to remark upon them, as the arrangements of the Company for opening with passenger traffic are not required to be completed until the 1st of August ensuing; but I would suggest to the Commissioners, as the time is so fast approaching, and as from my present inspection I perceive that very few arrangements have been made for fencing off the line and remedying these evils, whether the Company should not be informed of the necessity of properly fencing their lines throughout previous to their being opened, including therein the necessity of shutting out and preventing private persons from having access to the railway, except at regularly appointed level crossings. The situation of the station in the town of Newport, as shown in the accompanying plan, also appears to me a point to which the attention of the Commissioners ought to be drawn, in consequence of my late visit, in which the arrangements have been explained to me; but as the works are not far advanced, the ground being only partially levelled, and but a very trifling amount of masonry executed, it would appear more advisable to comment upon it now than after the Company shall have completed their works and be in readiness to open.

From the Corty-bella Junction to the point marked A., the railway runs along the side of the Cardiff turnpike-road, from which it is fenced by a good wall, with openings in it, to accommodate a row of good houses built on the opposite side, and the inhabitants of which have no means of leaving their premises but by crossing the railway. From A. to the station

the railway is a street of the town, and crosses at right angles on the level two of the principal streets ("Dock" and "Commercial") of the town.

I would strongly urge upon the Commissioners the advisability of recommending the Company to pause before adopting this, as it appears to me very objectionable proposal, and to make some better plan of approach to the town, either by means of their western branch or in such a manner as will, by avoiding the numerous level crossings and the closely-built streets, be productive of less risk to the public, and, I may add, save the Company the expense of constantly maintaining a large force of police, with gates and gatekeepers, by which means alone in such a town as Newport the railway could be worked with safety according to their present plans; or, at any rate, that they should adopt for a short time a temporary arrangement of a station at Corty-bella, until they shall have ascertained the requirements of their traffic.

These remarks are apart from the subject of difference between the freighters and the Canal Company, but have been introduced as arising naturally from an inspection of the Company's lines, which, with those of other parties, it was necessary to examine in order to ascertain the nature and extent of the matters forming the subject of the memorials. On the part of the freighters, the amount of property directly involved in the inquiry, as contained in the Appendix A., is 23 locomotives and 4,161 waggons of numerous patterns, valued by the parties themselves at 75,291*l.*, of which a very considerable proportion (3,477 waggons) are used exclusively in the coal trade, having four cast-iron wheels, about $\frac{3}{4}$ -inch wide at the rim, revolving on bent axles, with timber bodies attached. Their weight may be taken at an average of 17 cwt., and they carry, when piled, nearly three tons of coals each, and are drawn in trains of 20 to 24, the number being limited by the power of the horses to take the empty waggons on the ascending gradients on their return up the valleys to the collieries.

The Company considering that these waggons are of an objectionable construction and liable to numerous breakages, felt it to be incumbent on them in order to the fulfilment of the duties required of them, namely, to travel by locomotive power at speeds not exceeding 10 miles per hour, to prohibit them from being continued on their lines after the 1st of August next. Experiments had formerly been made to test the possibility of using these waggons with locomotive power, which had resulted in such frequent breakages that the experimenters had desisted from the use of locomotives; but perceiving that a new state of things had arisen from what formerly existed, when the experiments were tried, I requested the Company and the freighters to assist in an experiment which I proposed, in which a train of 55 of the same waggons, but with the loads reduced from an average of 3 tons to from $2\frac{1}{2}$ tons to $2\frac{3}{4}$ tons each, were conveyed with safety over the line at speeds varying up to $7\frac{1}{2}$ miles per hour. The line is not at present in as good a state as it will be when opened for locomotives, and no preparation had been made for the experiment either by strengthening the waggons or the connexions between them, and moreover, from various causes, several stoppages were necessary. I consider therefore that this trial was conclusive as to the strength of the waggons being sufficient, when used carefully, to stand being drawn by engine-power at moderate speeds when not over-loaded. As some doubt was entertained by the Company as to whether they could convey these waggons at remunerative rates at reduced speeds, a further experiment was tried as to the number which could be conveyed back empty, and which led to the conclusion that they are sufficiently strong to enable them to be drawn at moderate rates in trains as heavy as can be taken by a single engine of average power under all circumstances of road. The whole of these waggons, as now in use, are made without buffers, and are connected by stiff drawbars; the principal portion, however, of those which are not included in the (3,477) above-described coal-waggons might be altered so as to buff and be drawn by a loose chain.

The other interests involved in this question are the private roads to and arrangements at the wharves and at the collieries for loading and unloading the trains.

These arrangements are suited to the present system of waggons; but as the freighters seemed all to be of opinion that the introduction of the edge-rail into the district will be of advantage, if brought about with due regard to existing interests, I presume that they would not in the least object to alter or adapt these arrangements to an improved description of wagon, provided sufficient time were allowed to them to modify their existing works.

Another and very important subject in connexion with this question is, the extent of, and various interests involved in, tramroads belonging to private individuals or independent Companies, not the property of the Canal Company, although communicating with their roads, and thus affording, in conjunction with the Company's roads, the sole means of conveyance from the collieries to the shipping places.

Their extent, as shown in the accompanying Appendix B., is $72\frac{1}{2}$ miles, in which is also stated the amount of traffic received at the different points upon the Company's lines. From the inquiries which I made I am induced to estimate the amount of traffic on the private roads, as compared with that on the Company's roads, in the proportion of 1 to $1\frac{1}{2}$; but then the one is carried over $72\frac{1}{2}$ miles of roads, not including many short branches and lines for communicating from one part of the works to another, and others laid to and upon the wharves for the convenience of the traffic, whilst the whole extent of the Company's roads in connexion with them amount to only $29\frac{3}{4}$ miles, and some short branches in the town of Newport.

If the edge-rail system therefore be adopted on the Canal Company's lines, it will be seen that, as they possess the sole entrance, or as it were the key to the shipping port, it will either entail upon the owners of private roads their alteration and adaptation to the new system, involving, as I am credibly informed, an expense of not less than 600*l.* per mile over $72\frac{1}{2}$ miles, and the further alteration by the freighters of their accommodation works, or that they should adopt some means by which they could continue to use the branch roads as tramways, simultaneously with the edge-rail upon the Company's roads. The proposition of the com-

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bined wheel appears objectionable for the following reasons:—1st. The system of laying continuously edge-rails and tram-plates, the same wheels, whilst travelling, passing from one to the other, is such that I could not with confidence recommend its adoption on a line where passengers are carried; the points of junction of the two systems would be liable to get out of order, and the unequal wear of the wheels might be productive of inconvenience.

2nd. Each pair of wheels is, according to the patterns produced, heavier by 3 qrs. 11 lbs. than a pair of ordinary railway wheels of the same strength and dimensions, increasing considerably the draught, more particularly on the heavy gradients, such as exist on some of the branch roads.

3rd. The gauge of the combined wheels, when used upon the tram-plates, is so exact in consequence of the necessity of maintaining a true gauge for the edge-rail system, and they are so fixed upon their axles, and therefore unable to adapt themselves to slight inequalities in the gauge of the road, that it would be perfectly impracticable to make use of them, as proposed by the Company, upon the branch roads without a great expense in regauging these roads, which, although not in good repair nor well in gauge, are nevertheless capable of being used with the present tram-waggons.

4th. A further expense would be incurred by altering the switches or latches and points to suit the combined wheels.

5th. The tram-plate system involves at all sidings or points of junction, and at all connexions between the lines, an arrangement similar to what is known upon railways as a shifting rail, which is most objectionable, more particularly where passengers are carried; and it furthermore appears doubtful whether trains, with the combined wheel, travelling upon the tram-plates would not be liable to frequent accidents by leaving the line, in consequence of their being no proposed means of maintaining them in their proper position on the plates on the curves or elsewhere, except the flange or projecting edge of the tram-plate itself. Other objections have been raised by the freighters to the construction of the model waggon, but as they have reference purely to details not affecting the system, I forbear to enter upon them, as the Company have stated that, in proposing the model waggon, they did not intend to prescribe the form of body, but merely that all vehicles used upon their lines should be adapted, by means of the combined wheel, to travel either upon tram-plates or rails, and that they should be upon springs and be uniform as to buffers, and also be capable of being drawn by loose draw-chains.

Another proposition, made by Sir T. Phillips, was, that the present small waggons, each weighing 17 cwt., with loads of 2 tons 5 cwt. or thereabouts, should be continued to be used upon the branch roads; and upon arriving at their junction with the Company's lines, should be placed upon model trucks, two upon each, for conveyance to Newport, where they would again be placed upon tram-plates, and the present system of shipment be continued. Against this proposition, which smooths the difficulty as regards the use of the branch roads, the following objections may, I think, be fairly taken.

1st. The proportion of tare to useful load is very great and will render the supply of motive power very costly, more particularly upon the return journeys where there is no traffic, but the loads are entirely unserviceable.

2nd. It will entail the expense of properly constructed places for loading and unloading upon the model trucks, as also the supply by the freighters of these trucks to carry their present waggons, the maintenance of a double stock, and the risk of irregularity in their trade consequent upon the chances of the two descriptions of stock, in the course of the traffic, being collected at wrong points.

3rd. By this means the entire change of system in the district from the tram-plate to the edge-rail might be postponed indefinitely, as there would be no inducement for the owners of roads who were not freighters to adopt the edge-rail.

A third system proposed was the combination of the two systems in the roadway instead of in the wheel, laying the tram-plates and edge-rail concentrically, and carrying on the traffic when the two descriptions of stock were not adapted to travel in one train, separately. An almost insuperable objection to this is, that the tramroad would become a receptacle for mud, and the resistance to motion be thereby increased in a very great proportion.

The above comprise, I believe, all the propositions made by the Memorialists and by the Railway Company, who, as before stated, have the same object in view, and which also coincides with the interests of the landowners, viz., the development of the mineral field in connexion with the valleys leading down to the River Usk on its right bank, and the increase of traffic to, and trade at and near, the town of Newport.

Different views are entertained as to the means by which these objects are to be obtained, but in one point all the parties whose opinions I had an opportunity of ascertaining concur, viz., that the introduction and general adoption in the district of the edge-rail will be of great advantage.

The Company's proposition for carrying out the powers vested in them by Acts of Parliament, obtained in 1845 and 1848, appears to me to have been postponed for too long a period, as it seems that their resolution, as regards the model wheel, was only promulgated in November, 1848, with the intention of its being enforced on the 1st of August, 1849, involving very great changes, for which the parties interested might reasonably have expected a longer period, more particularly as their present stock has been hitherto used with the entire concurrence of the Canal Company.

Seeing the urgency of the case, the Company consider that the freighters might have taken less time to prepare and present their Memorial.

Upon a consideration of the whole case, with all the matters connected therewith, which were brought to my notice, but which are too lengthy to detail to the Commissioners, I am

induced to make the following recommendation, which will, in a great measure, I conceive, reconcile the views of all parties and bring about the desired change, with the least amount of inconvenience to all.

Of course, when such a complete alteration takes place, all persons interested must expect to suffer inconvenience and pay their quota towards the introduction of the improvements; and all that can be expected in assisting the various persons interested in coming to an understanding is, to arrive at such a plan as shall reduce the amount of inconvenience to a minimum to all.

The proposition which I have to make is, that the Company should lay upon their roads both the edge-rail and the tram-plate eccentrically, as shown in the accompanying sketch, carrying on the tram-plate traffic, when required, with locomotive power, with the present waggons for a period of two years from the present time, in trains of not less than 60 trams, after which none of them should be admitted upon their lines; but the freighters should renew their stock either with regular railway-waggons or with tram-waggons of an approved pattern, and all on wrought-iron wheels; and that the Company should provide motive power for these latter tram-waggons for a further period extending to six years from the present, in trains of not less than 40, after which period railway wheels only should be used; the alteration thus brought about would provide for the abolition of the present waggon in two years, which is stated by most of the freighters to be a fair time for wearing them out; and for the change from tram-plates to edge-rails throughout the district in six years, in which time it is computed that the Company's tram-plates, as well as those on the branch roads, will very generally require renewal. The intermediate adoption of a tram-waggon of approved pattern, with wrought-iron wheels would only apply to those freighters who carry their minerals upon branch roads, which the owners are unwilling to change within the period of two years, and their ultimate change would only involve an alteration of wheels, the waggons being in other respects similar to those used upon the railway.

The approval of the waggons by the Canal Company should not, I conceive, extend beyond the gauge and size of rails and buffers, and the height of these latter above the tram-plate or rail which might be stated as not greater or less than certain dimensions, allowing a fair amount of play for springs. The pattern of the body should be left to the freighter who supplies the waggon, but the tare might be limited as compared with the profitable load, and also the utmost weight to be allowed on each pair of wheels. Other details might also be stipulated, such as dimensions of wheels and axles, and materials of which constructed; also that the waggons are to be in good repair and of approved strength, and that the means of connecting with other waggons should be properly provided, and other points of detail unnecessary to enumerate.* This proposition which I have now submitted, if carried out, will entail upon the Company the necessity of incurring the immediate expense of rails, in addition to the improved tram-plates which they have laid, instead of a gradual change of the tram-plate into the edge-rail, which they propose by the combined wheel to effect and complete in a period of one year and a-half; but, on the other hand, the old plates will have received a fair amount of wear, thus sparing the edge-rails without adding to the cost of maintenance of way, and will be equally valuable, as old materials, after the lapse of six years as at present.

It will also entail upon them the necessity of providing a stock of locomotive power capable of being used upon the tram-plates, at the same time as they must also be provided with a stock adapted for the edge-rail.

This former stock might be so constructed as to be capable of alteration when necessary at a very small outlay; or, if they thought proper, they might adopt the combined wheel with their engines, and so have the power to use them for either system. An undoubted advantage would be, that they could open with their passenger-trains at once upon the edge-rail system as soon as laid, avoiding the objections before stated to the tram-plates and combined wheel system.

A doubt was expressed whether the present waggons could be hauled with safety by locomotive power, and at less cost than the toll which the Company are authorized to exact. Upon these heads the experiments tried in my presence were most conclusive, that the present coal-waggons, if limited in load to $2\frac{1}{2}$ tons, and slightly improved in the bars connecting one with the other, and carefully inspected to ascertain that they are in gauge, may, with due precaution on the part of the drivers, and by a proper application of breaks, be drawn in trains conveying net loads of 135 to 180 tons, at speeds not exceeding six miles per hour, in which case I conceive the Canal Company would have no cause of complaint; and the limitation as to speed would produce but slight inconvenience, as by Act of Parliament none of their traffic is allowed to exceed a speed of 10 miles per hour, and the average distance over which their mineral traffic is conveyed is stated to be only eight miles.

This proposition will reconcile other difficulties to which I have not referred, as being of a legal nature, more particularly one with reference to the Sirhowy tramroad, the proprietors of which are inclined to dispute the power of the Canal Company to alter their present tram-plate system from the Nine Mile Point to Newport.

To explain the difficulties, as felt by some of the freighters, I will instance the case of Mr. Marsh, owner of the Rock Colliery, who separately memorialized the Commissioners, and which will afford an instance by which to judge of the intricacies and variety of interest which are, I believe, common to the district.

Mr. Marsh's colliery is situated in the Sirhowy Valley, about $15\frac{1}{2}$ miles from Newport, in arriving at which his coal passes over $6\frac{1}{2}$ miles of a private tramroad, known as the Penllwyn-road, and 9 miles over the Canal Company's roads, including the *Park Mile*, the property of Sir C. Morgan.

* In the resolution issued by the Canal Company, the Directors state, that they intended that the model should only be followed in essential matters, and not in every detail, as understood by the freighters.

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By the lease by which Mr. Marsh holds his colliery, he informs me that he is compelled to convey his coal over the Penllwyn-road, the tolls upon which belong to other parties; but he states, that he has no power to compel the owners of that road either to improve or alter it, and therefore as the model waggon is not well adapted for that road in its present bad condition, he would virtually be compelled to abandon his colliery. His is not, I believe, a solitary case, but may be taken as an instance of the variety of interests in the district.

In this Sirhowy Valley are no less than three parallel roads, all maintained by separate interests, and each for the conveyance of traffic to the same point. One of these tramroads is also the only high road leading to a most populous district, upon which public horse-coaches and the mails are daily conveyed; houses are built close to it, and engines travel over it daily. From the cursory examination which I was enabled to make, I am led to believe that the three roads might be combined into one to the advantage of all parties, reducing the expense of altering and maintaining all three, adding to the regularity of the traffic by making one double road instead of three single roads, giving all parties the advantage of steam locomotive power, and giving to the district a good high road freed from the impediments and danger caused by the constant passage of locomotives along the same ledge, cut in the side of the hill, without fence on the low side, in many places amounting almost to a precipice. Other similar cases occur in other valleys, in which a proper amalgamation of interests, which should be identical, would be productive of similar advantages.

The Canal Company, by the powers vested in them by Parliament, are, as before stated, authorized to purchase or lease these branch roads; and it would appear well if they could enter into arrangements to carry out these desirable changes, and which would tend to the development of the district and the increase of traffic to and trade at the town of Newport; and, at the same time, remove some of the principal obstacles to the introduction of the edge-rail, which they so much desire, as they themselves would then alone be responsible for the changes in the roads necessary to introduce it, with the least possible inconvenience.

I fear this report has already been extended to too great a length, and I therefore forbear to enter into the details of the proposition which I have made with a view to the general advancement of the district and of the interests of all parties, without interfering with the powers vested by Acts of Parliament in the Monmouthshire Railway and Canal Company; and, in conclusion, I have to inform the Commissioners that in making the inquiries and examination consequent upon their minute of the 1st March, and which were necessarily of a lengthened nature, I received every assistance which I could desire both from the freighters and directors and officers of the Canal Company, who all afforded with willingness the means necessary for making the experiments which were suggested for the information of all parties.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

APPENDIX A.

TABLE of the ROLLING STOCK in use upon the TRAMWAYS in the WESTERN VALLEYS belonging to the MONMOUTHSHIRE RAILWAY and CANAL COMPANY.

NAME.	Coal-waggons on Four Wheels.			Coal-waggons on Eight Wheels.			Waggons for Iron.			Locomotives.			Miscellaneous.		
	No.	Value.		No.	Value.		No.	Value.		No.	Value.		No.	Value.	
	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.	£.
Mr. Prothers	550	8 to 10	4,950												
Messrs. Latch & Co. . .	420	8	3,360												
Mr. Powell	560	8	4,480												
Mr. Henry Marsh . . .	160	8 to 10	1,440												
Sir T. Phillips	156	8 to 10	1,404												
S. Homfray & Co. . . .	70	8 to 10	630	97	75 to 80	7,469	70	35 to 40	2,625	9	800	7,200	5	..	450
Romney Iron Company .	..	..	..	..	..	..	208	..	2,176	6	..	6,600			
Mr. Morrison	240	8 to 9	2,040												
Mr. Roger Lewin . . .	125	8	1,000												
Mr. Cartwright	210	8 to 10	1,890												
Mr. Crawshaw Baillie .	200	8 to 10	1,800												
Ebbw Vale Iron Company.	50	8	4,000				15	50	750	6	800	4,800	5	..	450
	18	60	1,080	..	..	..	25	45	1,125	..	..	..	5	..	100
							30	30	900						
							34	..	1,020						
							20	..	160						
							20	..	500						
Cwm Calyn and Blaina	20	10	200	..	..	..	30	..	450	2	..	1,600	4	..	300
Iron-works.							20	..	720						
							9	..	180						
							7	..	280						
							4	..	120						
Abercarn Collieries . .	185	8 to 10	1,665												
Mr. Russell	370	8 to 10	3,330												
Mr. John Jones	73	8 to 10	657												
Mr. Joseph Jones . . .	70	8 to 10	630												
Various parties for the haulage of goods and passengers on the tram- ways.	76	10	760
Total	3,477	..	31,556	97	..	7,469	492	..	11,006	23	..	20,200	95	..	2,060

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ABSTRACT OF PRECEDING ACCOUNT.		
	No.	Value.
Coal-waggons on 4 wheels . . .	3,477	£34,556
8 wheels . . .	97	7,469
Waggons for iron	492	11,066
Miscellaneous Waggons	95	2,060
Total waggons	4,161	£55,091
Locomotives	23	20,200
Total		£75,291

APPENDIX B.

TABLE showing the LENGTH and NATURE of TRAMROADS communicating with and bringing Traffic to the MONMOUTHSHIRE RAILWAY and CANAL COMPANY'S TRAMROADS, and showing the distance from Newport to the Points of Junction, and the amount of Traffic conveyed to these Points of Junction in the Year 1848.

NAME.	Length.	Ruling Gradient.	Nature of Curves.	Net Amount of Traffic conveyed to Junction with Companies' lines from each Road in the Year 1848.			Length of Canal Company's Roads connecting it with Shipping Places, including Sir C. Morgan's Park Mile.
				Iron.	Coals.	Sundries.	
	Miles.			Tons.	Tons.	Tons.	Miles.
Romaey	21½	1 in 88	Sharp	34,739	106,635	99	3½
Sirhowy	14½	1 in 98	Least radius 2½ chains	21,281	51,805	28,955	9
Penllwyn, or Mr. Jones's.	6½	1 in 156	Least radius less than 1 chain, but generally of an average nature.	22	50,201	99	9
Sir B. Hall's.	12	1 in 54 lower 4 miles and afterwards 1 in 140.	. . . . .	38	96,230	381	7½
Victoria Iron Company	2*	1 in 170 .	Very sharp	26,071	26,610	2,978	{ 20 21
Ebbw Vale Company	10½*	1 in 32	Least radius 3 chains.				
Mr. Russell's	1½	1 in 50	Average	61,083	38,521	13,473	22
Blaina and Cwm Cellyn Works	4½	. . . . .	Sharp	4,655	67,228	3,507	6½
Nant-y-glo	1½	. . . . .	. . . . .	1,843	76,177	11,824	Average 11
Risca Collieries . . . . .	..	. . . . .	. . . . .	
Crumlin and Abercarn . . . . .	..	. . . . .	. . . . .	
Total	72½	. . . . .	. . . . .	139,732	513,407	61,316	109

NOTE.—Those marked (*) are principally about the works, but are stated to be of the same gauge as the Company's roads.

Office of Commissioners of Railways, Whitehall,
April 26, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the accompanying copy of the report made to them by Captain Simmons, after his inquiry into the circumstances attending the differences between the Monmouthshire Railway and Canal Company, and certain of the freighters, and to express the hope of the Commissioners that the observations and suggestions it contains connected with that subject may lead to such an adjustment of those differences as may prove satisfactory to all the parties interested.

I am also to request you to call the particular attention of the Directors of the Company to the other observations contained in that report, relating principally to the management of the line and the precautions that will be necessary to ensure the public safety, before it is opened for traffic with locomotive engines.

I have, &c.,

H. D. HARNESS,
Capt. Royal Engineers.

The Secretary of the
Monmouthshire Railway and Canal Company.

Office of Commissioners of Railways, Whitehall,
April 26, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed extracts from the report made to them by Captain Simmons, after inquiring into the circumstances complained of in your memorial of the 9th February and subsequent communications, and to express their hope that the suggestions made by Captain Simmons may lead to such an adjustment of your differences with the Monmouthshire Railway and Canal Company as may prove satisfactory to both parties.

I have, &c.,

H. D. HARNESS,
Capt. Royal Engineers.

H. Marsh, Esq.,
&c. &c.

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SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed extracts from the report made to them by Captain Simmons, after inquiring into the circumstances complained of in the memorial forwarded with your letter of the 28th ultimo, and to express their hope that the suggestions made by Captain Simmons may lead to such an adjustment of the differences between the memorialists and the Monmouthshire Railway Company as may prove satisfactory to all parties.

I have, &c.,

W. Thompson, Esq., M.P., Whitehall-place.

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

Newport, April 28, 1849.

I HAVE the honour to acknowledge the receipt of your communication of the 26th, and a copy of the report of Captain Simmons to the Railway Commissioners, in reference to the Monmouthshire Railway and Canal Company's railway and tramroads, and the Company's requirements with regard to the mineral waggons to be used thereon, and for which I beg to tender to you my thanks.

I avail myself of this opportunity to observe, that I fully concur, and have every reason to hope and believe the Directors of the Company will concur, in the views taken by Captain Simmons, which I believe to be sound and judicious, and calculated to promote the interests of the Company and the freighters, as well as conduce to the welfare of the district generally.

There are many difficulties, however, which the Company will have to encounter in adopting the suggestions of Captain Simmons, one of the greatest of which will be the procurement of the means necessary for giving effect to them. By the provisions of the Company's Act of 1848 (see clause 27, p. 26), the Commissioners of Railways are empowered to direct the application of surplus revenue for certain purposes, and amongst them, to the "construction of any new works, or in any improvements of the existing works of the said Company, other than ordinary maintenance and repairs;" and, as the Directors will meet on Wednesday next to consider the report and adopt such measures as they may deem advisable, you will perhaps do me the favour to inform me whether, as the Company have no special power to borrow money for an eccentric layer of edge rails, and the sums they are authorized to raise will, in all probability, be fully absorbed in the works, &c., they are obliged to erect, the Railway Commissioners would sanction the appropriation of surplus revenue, if any there should be, for defraying the additional cost which the adoption of Captain Simmons' suggestions would involve, to enable me to speak to them definitely upon so important a point. I flatter myself that you and the Commissioners will coincide in opinion with me, that such an appropriation of surplus revenue would be consonant with every principle of equity and justice, as the laying down of an edge-rail, in addition to a tram-plate, would be an expense not contemplated when the Act was obtained, and for the laying of which no fund is provided. The appropriation of surplus revenue by the mode suggested would conduce to the benefit of all parties, both the Company, the freighters, and the public.

The suggestions of Captain Simmons with respect to the working of the lines will, I have no hesitation in saying, receive the attention of the Directors, with a view to their complete adoption. There are two questions in connexion with this part of the subject upon which I should be greatly obliged by your advice: are the Company to be held irresponsible for any accident or misfortune that may happen to the present trains, or any consequential danger, so that such accident or misfortune does not result from the carelessness or misconduct of the Company's servants or the Company's plant?

And are any of the present trains, if broken down before the appointed time for the disuse of them, to be repaired and again employed?

The conclusion, in each case at which I have arrived is that of a negative; but it would be more satisfactory were you to favour me with your opinion for the information of the Directory.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

R. RUSCOE, Secretary.

Office of Commissioners of Railways, Whitehall,
April 30, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 28th instant, and to express to you their satisfaction that the report made by their officer is likely to lead to an adjustment of the differences between the Monmouthshire Railway and Canal Company and the owners of mineral works using the line. But with reference to your question respecting the disposal of the Company's surplus revenue under the provisions of the 27th section of their Act of 1848, the Commissioners can express no opinion until there is a surplus and a formal application made on the subject to them under that section.

I am also to inform you that the Commissioners must decline answering the questions of law referred to in your communication, upon which the Company should take the opinion of their legal adviser.

I have, &c.,

To the Secretary of the
Monmouthshire Railway and Canal Company.

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

At the foot hereof I have the honour to transmit to you a copy of a resolution adopted at a meeting of the Monmouthshire Railway and Canal Company, held on the 2nd instant.

I have, &c.,

Capt. Simmons, R.E.,
&c. &c.

Newport, May 8, 1849.

R. RUSCOE, Secretary.

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At a meeting of the Committee, held on the 2nd instant,

It was resolved,

"That the thanks of this meeting be given to Captain Simmons for his patient investigation and able report, and that the chief clerk do communicate to him this Resolution."

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Appendix No. 75.

OXFORD, WORCESTER, AND WOLVERHAMPTON RAILWAY.

Oxford, Worcester,
& Wolverhampton
Railway.

GENTLEMEN,

Steward's Office, Blenheim Palace,
August 30, 1849.

IN accordance with instructions received from His Grace the Duke of Marlborough, I beg to forward you the inclosed memorial.

I have, &c.,

H. HARRIS.

To the Commissioners of Railways,
&c. &c.

Blenheim, August 28, 1849.

The MEMORIAL of the undersigned Landowner on the Line of the Oxford, Worcester, and Wolverhampton Railway,

SHOWETH,

THAT orders have been issued by the Oxford, Worcester, and Wolverhampton Railway Company to their contractors to stop the works on the said railway throughout the whole line, which orders are notoriously caused by their having no funds at their command to enable them to proceed with the same.

That serious injury and inconvenience is felt by the proprietors through whose lands the line passes, and by the inhabitants generally of those districts where roads are diverted and left unfinished, communications impeded, and grievous trespass endured, in consequence of the state of the works upon the line.

That by the 131st section of the Act for making the said railway it is provided, that in the event of the Company thereby incorporated neglecting to proceed therewith in such manner as to afford a reasonable security for the completion thereof within the time limited by the Act, it shall be lawful for the Board of Trade to require the Great Western Company (in connexion with which this railway is to be made) to enter upon the railway and complete the same.

The undersigned, therefore, trusts that the Commissioners will, without delay, proceed in the manner directed by Parliament, and thus secure to him, and the public generally, the use of the said railway within the time prescribed by the Act.

To the Railway Commissioners,
&c. &c.

MARLBOROUGH.

SIR,

Office of Commissioners of Railways,
August 31, 1849.

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 30th instant, transmitting a memorial from His Grace the Duke of Marlborough, and to inform you that the Commissioners will communicate with the respective Railway Companies on the subject of that memorial.

I have, &c.,

Mr. Harris,
Blenheim Park, Woodstock.

H. D. HARNES,
Capt. Royal Engineers.

TO THE HONOURABLE COMMISSIONERS OF RAILWAYS.

The MEMORIAL of the undersigned Landowners, and others, inhabitants of Charlbury and vicinity, on the line of the Oxford, Worcester, and Wolverhampton Railway,

SHOWETH,

THAT understanding that orders have been issued by the Oxford, Worcester, and Wolverhampton Railway Company to their contractors to stop the works on the said railway

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throughout the whole line, which orders are notoriously caused by their having no funds at their command to enable them to proceed with the same.

That serious injury and inconvenience are felt by the proprietors through whose lands the line passes, and by the inhabitants generally of those districts where roads are deserted and left unfinished, communications impeded, and grievous trespass endured, in consequence of the state of the works upon the line.

That by the 131st section of the Act for making the said railway, it is provided that, in the event of the Company thereby incorporated neglecting to proceed therewith in such manner as to afford a reasonable security for the completion thereof within the time limited by the Act, it shall be lawful for the Board of Trade to require the Great Western Company, in connexion with which this railway is to be made, to enter upon the railway and complete the same.

The undersigned, therefore, trust, that the Commissioners will, without delay, proceed in such manner as may secure to them, and the public generally, the use of the said railway within the time prescribed by the Act.

And your memorialists will ever pray.

[Here follow 53 signatures.]

Memorials of the same purport were received from Burford, Stow, Moreton-in-the-Marsh, Eresham, Shipston-on-Stour, Campden, Long Compton, and J. Brash, Esq.

Office of Commissioners of Railways, Whitehall,
August 31, 1849.

MY LORD,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of a memorial, signed by yourself and other inhabitants of Charlbury and its vicinity, and to inform you that the Commissioners will communicate with the respective Railway Companies on the subject of that memorial.

I have, &c.,

The Right Hon. Lord Churchill,
Cornbury Park, Enstone.

H. D. HARNESS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
September 1, 1848.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of a memorial addressed to them by His Grace the Duke of Marlborough; and also the enclosed copy of a memorial addressed to them by the inhabitants of Charlbury and its vicinity, and to request the observations of the Company thereon with as little delay as possible.

I have, &c.,

The Secretary of the
Oxford, Worcester, and Wolverhampton Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
September 1, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to forward to you the enclosed copy of a memorial, addressed to them by His Grace the Duke of Marlborough; and also the enclosed copy of a memorial addressed to them by the inhabitants of Charlbury and its vicinity, and to request the observations of the Company thereon with as little delay as possible.

I have, &c.,

To the Secretary of the
Great Western Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

Great Western Railway Company, Paddington,
September 13, 1849.

SIR,

I HAVE submitted to the Board of Directors your letter of the 1st instant, enclosing copies of two memorials (to the same effect), addressed to the Railway Commissioners by the Duke of Marlborough and the inhabitants of Charlbury and its vicinity, on the subject of the Oxford, Worcester, and Wolverhampton Railway.

I am desired by the Directors to acquaint you, that in the present depreciated state of railway property generally, such is the consequent difficulty of raising capital to construct new lines authorized by Parliament, that it is out of the power of this Company to undertake the provision of funds to complete the Oxford, Worcester, and Wolverhampton Railway, even if the Act had conferred upon them (which it has not) specific provisions for that object.

This Company have already done all in their power to facilitate the construction of that undertaking, by a lease at a fixed rent for the whole line when completed; and it is by no means improbable, as it seems to this Board, that the Directors of that Company will eventually be able to accomplish it, although with much difficulty, when the existing embarrassments attending railways shall have diminished.

While this Company considers itself pledged to perform all its engagements, and are pro-

ceeding with caution and prudence, in order that the means may be gradually found to carry out what is essentially necessary in the lines which they have themselves undertaken, it cannot be consistent with their duty to hold out a prospect of raising money to assist other Companies in prosecuting their works.

It being the declared policy of the Government under existing circumstances to retard rather than accelerate the outlay of capital for new railways, the Board think it more likely that the objects of the memorialists will be attained if the Railway Commissioners leave the Oxford, Worcester, and Wolverhampton Company free to make progress with portions of their line, as they may from time to time find best suited to their financial position, without attempting to accomplish it by any such interference as is suggested in the memorials.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

CHAS. A. SAUNDERS,
Secretary.

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Office of Commissioners of Railways, Whitehall,
September 19, 1849.

SIR,

I AM directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 13th instant, relative to the memorials from the Duke of Marlborough and the inhabitants of Charlbury, complaining of the non-completion of the Oxford, Worcester, and Wolverhampton Railway; and with reference to that part of your letter in which you state that, by the Oxford, Worcester, and Wolverhampton Railway Act, no provision is made for enabling the Great Western Railway Company to raise the requisite funds for the construction of the railway, I am instructed to inquire, whether the Great Western Railway Company do not consider that (if called upon by the Commissioners, under the 131st section of the Act 8 and 9 Vict., c. 184, to enter upon the railway and proceed with the construction thereof, and exercise all or any of the powers of the Oxford, Worcester, and Wolverhampton Railway Company with relation thereto) the Great Western Railway Company would have the power of making calls on the shareholders of the Oxford, Worcester, and Wolverhampton Railway Company; and whether in such case they would not have the means of completing the railway; for although, as the Commissioners are informed, nearly the whole of the original capital of the Oxford, Worcester, and Wolverhampton Railway Company has been already called up; yet it appears, by subsequent Acts of 1846 and 1848, the provisions of which are taken, subject to those of the Act of 1845, that Company have been authorized to raise a considerable further amount of capital for the purposes of the railway, which has not yet been called up.

I have, &c.,

To the Secretary of the
Great Western Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

Paddington Station,
October 5, 1849.

SIR,

I HAVE submitted to the Board of Directors your letter of the 19th ultimo, requesting to know, for the information of the Railway Commissioners, whether this Company consider that they have the power of making calls on the shareholders of the Oxford, Worcester, and Wolverhampton Company; and in such case, whether they would not have the means of completing that railway?

I am desired to acquaint that there is not, as the Directors of this Company believe, any compulsory power upon the shareholders of the Oxford, Worcester, and Wolverhampton Company to pay more capital for the completion of that railway than the sum which they originally agreed to subscribe—which it is understood has been already called up and expended by the Directors of that Company.

Under such circumstances it does not appear to this Board that they can possess any means of completing that railway in the manner suggested by your inquiry, even although it may be competent to the shareholders of that Company, under subsequent Acts, to agree among themselves to raise further capital to carry out their undertaking, and to determine the conditions upon which it is to be raised.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

CHAS. A. SAUNDERS,
Secretary.

Batsford Park, Moreton-in-Marsh,
September 14, 1849.

GENTLEMEN,

I ENCLOSE a memorial to you from the town of Charlbury, which I have been requested to take charge of. The parties are anxious that you should compel the Great Western Company to complete the Oxford, Worcester, and Wolverhampton Railway, as they are bound to do by Act of Parliament at your command, whenever the Oxford and Worcester Company neglect to proceed with their works, so as to afford a reasonable security for the completion of the line within the time limited by the Act. All the works are now suspended by order from the Directors, and the contractors are proceeding to sell off all their plant, horses, &c. I understand that a similar memorial was forwarded to you some weeks ago from other parties in Charlbury, who have been informed by you that you had communicated the same to both Compa-

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mies. Other memorials will be shortly sent to you, and I take this opportunity of addressing you on the subject.

I trust that you will not any longer content yourselves with giving notice of these applications to the two Companies, and waiting for their answers (which is just doing nothing at all), but that some immediate inquiry will be made by you into the state of things, in order that you may act promptly. Whatever is to be done had better for all parties be done quickly. There is a million and a half expended already, on which no interest is now paid, or can be till the line is finished; and the indemnity which will be claimed by the contractors for leaving their works, and the charge which must be incurred on their return, or on any new contractor resuming the works, may be to a great extent avoided by decisive action on your part, and the real interest of all concerned in both Companies be thus promoted. On the part of the public, and of the landowners whose estates are interfered with, I also apply. The public communications are seriously interrupted, and in some cases made dangerous, by unfinished works; and the injury and nuisance which is sustained by the proprietors is very great, and must increase if the line is abandoned, and left without any charge being taken of the fences, watercourses, &c. For these reasons we call upon you to interfere promptly. The Act directs you to do so, whenever you are of opinion that the Company fail to proceed so as to afford a reasonable security for the completion of the line within the specified time; and we earnestly hope, therefore, that you will forthwith institute such an inquiry as may enable you to satisfy yourselves whether such is not now the case.

I have, &c.,

To the Commissioners of Railways.

REDESDALE.

The MEMORIAL of the undersigned Landowners and others, inhabitants of Charlbury, on the line of the Oxford, Worcester, and Wolverhampton Railway.

SHOWETH,

THAT orders have been issued by the Oxford, Worcester, and Wolverhampton Railway Company to their contractors, to stop the works on the said railway throughout the whole line, which orders are notoriously caused by their having no funds at their command to enable them to proceed with the same.

That serious injury and inconvenience are felt by the proprietors, through whose lands the line passes, and by the inhabitants generally of those districts where roads are diverted and left unfinished, communications impeded, and grievous trespass endured in consequence of the state of the works upon the line.

That, by the 131st section of the Act for making the said railway, it is provided, that in the event of the Company thereby incorporated neglecting to proceed therewith in such manner as to afford a reasonable security for the completion thereof, within the time limited by the Act, it shall be lawful for the Board of Trade to require the Great Western Company, in connexion with which this railway is to be made, to enter upon the railway and complete the same.

The undersigned therefore trust that the Commissioners will, without delay, proceed in the manner directed by Parliament, and thus secure to them, and the public generally, the use of the said railway within the time prescribed by the Act.

[Here follow 112 signatures.]

Office of Commissioners of Railways, Whitehall,
September 17, 1849.

MY LORD,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 14th instant, forwarding a memorial from certain landowners and inhabitants of Charlbury, complaining of the injury and inconvenience occasioned by the unfinished state of the works of the Oxford, Worcester, and Wolverhampton Railway, and requesting the Commissioners to call upon the Great Western Railway Company to enter upon the railway and complete the same, under the provisions of the 131st section of the Oxford, Worcester, and Wolverhampton Railway Act. And I am to inform your Lordship, that the subject is under the consideration of the Commissioners.

I have, &c.,

The Right Hon. Lord Redesdale.
&c. &c.

H. D. HARNESS,
Capt. Royal Engineers.

Batsford Park,
October 25, 1849.

GENTLEMEN,

I HAVE been requested to forward the enclosed memorial to you, which has been got up in the town of Evesham, and signed by almost every landowner and tenant in the neighbourhood, praying that you will interfere and compel the Great Western Company to complete the Oxford, Worcester, and Wolverhampton line according to the provisions of the Act.

As it is now some time since I first addressed you on the subject, I hope that you will excuse me if I ask what has been done upon it, and what you propose to do. The question is one of vital importance to those who are suffering under the nuisances we complain of, and the remedy ought not to be delayed.

Parliament has made you the guardians of the public in all railway matters, and in this

particular instance by a special enactment. We have, therefore, a right to demand the exercise of the powers confided to you, if you are satisfied that the works are suspended without any reasonable prospect of being resumed. I wish, therefore, to know whether you doubt this being the case, and require any evidence on the subject—or being satisfied, propose to proceed in the manner pointed out in the Oxford, Worcester, and Wolverhampton Railway Act, 1845.

If you feel any unwillingness to take at once the decided step of ordering the Great Western to complete the line, much good might be done by informing them, that unless the works are gone on with by the Oxford, Worcester, and Wolverhampton Company within a given time, it will be your duty to compel them to undertake the task. The Directors of the Oxford, Worcester, and Wolverhampton do not wish to have their line delivered over to the Great Western, to finish at their own charges, and the Great Western refuse all proposals for arrangements made by the other party, however reasonable. An intimation from you of the nature I suggest will probably have a beneficial effect on both parties, and lead to the work being resumed; but to be effectual a definite time must be named beyond which you will admit of no excuse.

I have, &c.,

To the Railway Commissioners.

REDESDALE.

The MEMORIAL of the undersigned Landowners and others on the line of the Oxford, Worcester, and Wolverhampton Railway,

SHOWETH,

THAT orders have been issued by the Oxford, Worcester, and Wolverhampton Railway Company to their contractors, to stop the works on the said railway throughout the whole line, which orders are notoriously caused by their having no funds at their disposal to enable them to proceed with the said works.

That serious injury and inconvenience is felt by the proprietors through whose land the line passes, and by the inhabitants of those districts where roads are diverted and left unfinished, communications impeded, and grievous trespass endured, in consequence of the unfinished state of the works upon the line.

That, by the 131st section of the Act for making the said railway, it is provided, that in the event of the Company thereby incorporated neglecting to proceed therewith in such manner as to afford a reasonable security for the completion thereof within the time limited by the Act, it shall be lawful for the Board of Trade to require the Great Western Railway Company, in connexion with which this railway is to be made, to enter upon the railway and complete the same.

The undersigned, therefore, pray that the Commissioners will, without delay, proceed in the manner directed by Parliament, and thus secure to them, and the public generally, the use of the said railway within the time prescribed by the Act.

[Here follow 83 signatures.]

Office of Commissioners of Railways, Whitehall,
November 2, 1849.

MY LORD,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 25th instant, forwarding a memorial from the owners and occupiers of land in the neighbourhood of Evesham, and requesting to be informed what steps the Commissioners propose to take with reference to the request urged upon them by this and by other memorials, that they should call upon the Great Western Railway Company to complete the Oxford, Worcester, and Wolverhampton Railway, under the provisions of the Act of Parliament by which that railway has been sanctioned; and to inform your Lordship that since the receipt of the first memorial on this subject, the Commissioners have taken such steps as they deemed expedient to obtain the information they consider necessary to enable them to make their decision, but that until the whole of the requisite information is before them, and they have carefully considered it, they cannot state what course they shall adopt.

I have, &c.,

The Right Hon. Lord Redesdale,
&c. &c.

H. D. HARNESSE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
September 17, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you that they are desirous to receive an early reply to the letter from this office of the 1st instant, enclosing copies of the memorials addressed to them by the Duke of Marlborough and the inhabitants of Charlbury; and that they are also desirous, with reference to the subject of those memorials, to receive detailed information respecting the works and parts of the line completed, the works and parts of the line in progress, and the works and parts of the line at present abandoned, with the reasons for such abandonment.

I have, &c.,

The Secretary of the
Oxford, Worcester, and Wolverhampton Railway Company.

H. D. HARNESSE,
Capt. Royal Engineers.

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Appendix No. 75. SIR,

Worcester, October 2, 1849.

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Railway.

HAVING laid before the Board of Directors of this Company your letters dated the 1st and the 17th ultimo, and the copies of memorials to the Commissioners of Railways which accompanied the former, I was directed by the Board to transmit to you a copy of their report, dated the 1st of June last, to a special meeting of their proprietors, and to request the favour of you to lay the same before the Commissioners, for their information, as to all matters connected with the memorials above mentioned.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.NORL THOS. SMITH,
Secretary.

REPORT.

THE Directors have the unpleasant duty to report to the shareholders that a misunderstanding has arisen between them and the Directors of the Great Western Railway Company respecting the terms upon which that Company undertook the lease or guarantee of the Oxford, Worcester, and Wolverhampton Railway and Branches. And inasmuch as they see no prospect of any immediate arrangement being made satisfactory to both Companies, the Directors propose to lay before the shareholders the substance of all that has taken place in the negotiations between them, to enable the shareholders to form their own opinion upon the position in which this Company is placed with respect to its engagements with the Great Western Company, and to come to a determination upon the best course to pursue for the protection of their interests.

In the spring of the year 1844, several gentlemen, in the district of South Staffordshire, anxious to obtain better railway accommodation than was at that time afforded them by the Grand Junction Railway, the only one then passing through the district, and the London and Birmingham Railway, with which it was in connexion, and has since been amalgamated under the name of "The London and North Western Railway," united with gentlemen residing in or near the towns on the proposed line of railway, in a scheme for making a railway from the Great Western Railway at Oxford, to Worcester, and Wolverhampton.

In furtherance of this object, the parties engaged made application for assistance and support to the Great Western Railway Company, and after some negotiation, during which the necessary preliminaries for an application to Parliament were being prosecuted, a provisional agreement was, on the 15th of August, 1844, entered into between the Directors of the Great Western Company, of the one part, and the Committee of Management of the Oxford, Worcester, and Wolverhampton Railway Company, of the other part, whereby the Directors of the Great Western Railway Company agreed to guarantee to this Company an annual payment of 35,000*l.* as a permanent rent for a lease of the projected railway, and to pay over a moiety of the annual profits, after deducting the rent, and all the expenses of working the line.

The Great Western Railway Company also agreed to use their exertions and influence to obtain a Bill in the next session of Parliament, at the expense of the Oxford, Worcester, and Wolverhampton Railway Company; but as conditions precedent to their obtaining the sanction of their proprietors, the Directors of the Great Western Company required proof—

First—of a traffic of 75,000*l.* per annum.

Second—that two-thirds of the landholders in length of line were consenting or neutral.

Third—the approbation of the Board of Trade. And,

Fourth—a *bonâ fide* subscription list to the extent of 600,000*l.*

The Oxford, Worcester, and Wolverhampton Railway Company agreed to those conditions, and undertook to provide satisfactory proof thereof, or, in case of failure, to absolve the Directors of the Great Western Company from all engagements of guarantee or other assistance.

The Great Western Directors agreed to convene a special meeting of their proprietors at the earliest period after due proof of the four specific requirements above referred to, and to recommend the sanction of the Company to be given at such special meeting to a formal agreement under their corporate seal, it being understood that the Act to be applied for should contain all requisite powers for giving legal effect to the lease and guarantee.

The above agreement was executed by the chairman, vice-chairman, and three other Directors of the Great Western Company, and by five of the provisional committee of the Oxford, Worcester, and Wolverhampton Company.

After the signing of the above agreement, an alteration was made in the course of the main line of the intended railway, by carrying it in a direct line from Oxford to Worcester, instead of passing near the town of Banbury, as had been originally contemplated; and as this involved an increase in the length of railway to be made by this Company, negotiations took place between the provisional committee and the Great Western Railway Company for an alteration in the terms of the agreement before entered into.

The new terms agreed upon were embodied in another agreement, dated the 20th of September, 1844, expressed to be made between the Directors of the Great Western Railway Company of the one part, and Francis Rufford, William Mathews, and George Benjamin Thorneycroft, three of the committee of management of this Company, of the other part.

By which, after reciting the former agreement, and that by the alteration of the line an increase of capital was become necessary, and also stating that at a meeting of the Directors of the Great Western Company, held that day at Paddington, the matters had been discussed

with the deputation of this Company, and the alteration of the line and the increase of capital assented to,

It was agreed that the capital should be 1,500,000*l.*;

That the Directors of the Great Western Company should guarantee to this Company an annual payment of 52,500*l.*, subject as hereinafter mentioned, as a permanent rent for a 999 years' lease of their projected railway, with a double line of broad-gauge rails complete, with stations, and every requisite convenience for traffic, commencing from or near to the city of Oxford, and terminating at Wolverhampton with a junction with the Grand Junction Railway.

The line was to be laid and formed in the direction mentioned in the prospectus, or as near thereto as circumstances would admit of, with branches to the Kingswinford district, to Stourbridge, to the Stoke Alkali Works, and to the River Severn at Worcester.

In addition to the fixed rent of 52,500*l.*, the Great Western Company agreed to pay over a moiety of the annual profits after deducting the rent and all the expenses attending the working of the line.

And in the event of it being found impracticable to complete the railway within the amount of 1,500,000*l.*, and any further sum was required for that purpose, it was agreed that if any clear profit was realized after paying the rent and working expenses, the same should be first liable for the payment of the interest on such surplus expenditure, not exceeding 250,000*l.*, and a moiety of the balance only of such profits, after deducting such interest, should be paid over to this Company.

That in the event of the 1,500,000*l.* not being expended in the formation of the line and branches, then that a proportionate deduction should be made from the rent of 52,500*l.*

That the traffic required by the Great Western Company to be shown, according to the conditions contained in the recited agreement, should be 131,250*l.*, instead of 75,000*l.*, and the subscription list 900,000*l.*, instead of 600,000*l.*

That all the other terms and stipulations of the recited agreement should remain in force, except as altered by the subsequent arrangement.

This second agreement was signed by the Directors of the Great Western Railway Company, but not by any of the provisional committee, nor any other person, on behalf of the Oxford, Worcester, and Wolverhampton Company, although the terms were fully understood and assented to by them.

As soon as this further arrangement had been made, an amended prospectus was issued, under the sanction of both parties, which contains the following statement on this subject:—

"In addition to these claims on public attention and support, the committee of management have concluded an arrangement with the Directors of the Great Western Railway Company, conditional on the necessary preliminaries for proceeding with the Bill in Parliament being completed, and subject to the sanction of their proprietary, by which a guarantee of $3\frac{1}{2}$ per cent. per annum on the estimated capital, with half the surplus profits, will be secured to the shareholders in this undertaking. And in the event of its being found necessary to expend a greater sum than 1,500,000*l.* in constructing the line (but which amount is estimated to be more than sufficient for the purpose), the Directors of the Great Western Railway Company have agreed that interest on such additional amount, provided the same does not exceed 250,000*l.*, shall be paid previous to any division of profits being made."

This was the position of the two Companies with respect to each other, at the time of going to Parliament, in the session of 1844-5, when the "battle of the gauges" was fought upon the Bill introduced by this Company, which gradually assumed the appearance of, and in fact became, a contest between the Great Western Company and the London and Birmingham Company, who, it is well known, were the projectors of a rival line of railway to occupy the same part of the country.

The conditions required by the agreements between the two Companies for the support and assistance of the Great Western Company were entirely disregarded, for not only was there not two-thirds of the landholders assenting or neutral, nor a sufficient subscription list, but the Board of Trade, to whom the several railway schemes of that session were referred, reported against this Company's line, and in favour of the rival project. Yet the Great Western Company pursued the measure, and from auxiliaries, to all intents and purposes became principals in the prosecution of the Bill. They completed the subscription contract, made up the necessary deposit for going to Parliament, and, in fact, everything was done under their advice and direction.

After a severe and protracted Parliamentary struggle, the Great Western party were ultimately successful, and the Act incorporating this Company received the Royal assent on the 4th of August, 1845.

By section 4, the capital of the Company was 1,500,000*l.*, with power, by section 9, to borrow 500,000*l.*

By sections 11 and 12, powers were taken by the Great Western Company to subscribe not exceeding 750,000*l.*, and to raise the money by shares or loans. Section 13 authorizes them to vote at the meetings of the Company, except upon questions relating to the sale, lease, or working of the railway by the Great Western Company; and section 17 authorizes the appointment of six Directors of the Great Western Company as directors under this Act.

By section 38, it is provided that the railway should be completed on the same gauge and construction as the Great Western Railway.

By sections 94 to 110 inclusive, the Great Western Company are united with this Company in a guarantee to the Severn Navigation Commissioners to make up the tolls upon that river 14,000*l.* per annum, to come into operation upon the opening for goods traffic of any part of the railway or branches between Worcester and Wolverhampton.

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By sections 128 and 129, power is given to lease, or sell and convey the railway to the Great Western Company, and by section 130 it is enacted that it shall be lawful for the Company thereby incorporated, and for the said Great Western Railway Company, to make and enter into such contracts or agreements for effecting the purposes aforesaid, or for otherwise working or using the said railways, or any of them, or any part or parts thereof respectively, or for the maintenance and repair thereof, or any part or parts thereof respectively, as they, the said Companies, may respectively deem advisable, and subject to such terms and conditions as may be mutually agreed on between them.

"And any contract or agreement made before the passing of this Act for all or any purposes aforesaid by the provisional committee of the Company hereby incorporated, and the Directors of the said Great Western Railway Company, with the sanction of any general meeting of the said last-mentioned Company, shall be as valid and binding in every respect, as if made subsequently to the passing of this Act, and in conformity with the provisions thereof."

By section 131 it is recited that the Great Western Company were willing to undertake, in case of need, the due completion of the railway by that Act authorized, and the branches thereof, and it is enacted, that in the event of the Company thereby incorporated failing to complete the said railway and branches within the period limited by that Act, by neglecting at any time to proceed therewith in such manner as to afford a reasonable security for the completion thereof within the aforesaid period (five years), it should be lawful for the Great Western Railway Company, after giving one month's notice of their intention so to do, to enter upon the said railway, and to proceed with the construction thereof, and to exercise all or any of the powers of the Company thereby incorporated in relation thereto. "And if at any time the said Company hereby incorporated shall, in the opinion of the Board of Trade, fail to proceed with the construction of the said railway in manner aforesaid, the said Great Western Company shall, on being required so to do by the said Board, enter upon the said railway, and shall complete the same as aforesaid. And in such event, it shall not be lawful for the Company hereby incorporated, or the directors thereof, at any time from and after such entry as aforesaid, unless with the special consent of the said Board of Trade, to declare, make, or pay any interest or dividend upon any of the shares in the said undertaking, or to the holders or proprietors thereof, until after the whole of the said railway shall have been constructed and opened for public use."

It may be taken that the Great Western Company were not only the active promoters of the Bill generally, but that the particular clauses, especially those relating to the powers of the Great Western Company, were prepared and inserted in the Bill on their behalf by the parties acting for them, and as to the clauses entailing liabilities on that Company, such as the Severn Navigation guarantee, that they were settled and approved of by them.

The only resolution which appears to have been come to at any of the general meetings of the shareholders of the Great Western Railway Company, after the making of the agreements of August and September, 1844, and before the passing of the Act of 1845, is the following, which was made at the general half-yearly meeting, on the 18th of February, 1845:—

"That the directors be and they are hereby empowered to take all necessary steps for applying to Parliament, either in their own names, or separately, or jointly with any corporation or persons, for Bills for making railways between "Standish and Ross, Monmouth and Hereford, with a branch into the Forest of Dean, and from Oxford to Worcester and Wolverhampton, with branches therefrom to Kingswinford and the Stoke Alkali Works, and to agree with any person or persons who shall apply to Parliament for such Bills for the construction of or for taking on lease or use such railways, or any part thereof, when made, either by guarantee or otherwise, and upon any such terms and conditions as may be agreed upon for such purpose."

At the first meeting after the Act came into operation, on the 6th of August, 1845, the Directors of this Company came to the following resolution, which was entered on their proceedings:—"Resolved, that the following resolution entered on the minutes of the proceedings of the provisional committee, at their meeting, on 28th June, 1845, be now confirmed, viz:—

"That Messrs. Rufford, Mathews, and Thorneycroft be appointed a committee, with full power to enter into and conclude all necessary arrangements with the Great Western Railway Company, for the lease of this line to them, on the terms and stipulations already agreed upon; and to enter into, make, and execute all such deeds as may be necessary for the purpose."

On the 20th of August, upon the question of confirming the preceding resolution, the following resolution was come to:—

"That the minutes of the meeting of 6th August be confirmed, except so far as to any question which may arise as to the intent, meaning, and construction of any agreements or arrangements entered into with the Great Western Railway Company, now under consideration, and which have been referred to the chairman, Mr. Thorneycroft, and Mr. Mathews, for arrangement with that Company, on such terms as those gentlemen may deem proper."

About this time it became evident to all parties concerned, that the capital of 1,500,000*l.* provided by the Act would be insufficient for the construction of the railway. During the progress of the Bill through Parliament, the making of side lines upon a considerable portion of the railway, and other additional works, had been imposed upon the Company, besides which, both materials and labour had greatly advanced in price, in consequence of the number of railway Bills passing through Parliament.

It became therefore necessary to have an understanding with the Great Western Company, for the enlargement of their guarantee, to a sum sufficient to cover the cost of the line, as originally contemplated, and the following correspondence, for that purpose took place between the chairmen of the two Companies:—

MY DEAR SIR,

Bellbroughton, November 22, 1845.

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I AM requested to submit to the Directors of the Great Western Company, that they should take into their consideration the fact that this Company will be subject to large additional expenditure in the construction of this railway, from a variety of causes not estimated by Mr. Brunel when he calculated the total expenditure requisite at 1,500,000*l*. Amongst other unexpected cost I may name the extent of the preliminary expenses, which have been rendered very great from the Parliamentary contest; the large sums to be paid to opposing landowners; two double lines of railway to be laid down instead of three rails, between Wolverhampton and Abbotswood, and the side lines which were forced upon us in committee.

The traffic proved being 219,000*l*., after the rates had been reduced to the present, and not the rates existing when the agreement was made, the amount required to be proved being 131,250*l*., our Board trust that the Great Western Company will increase the amount of the rent to three and a-half per cent. upon the legitimate expenditure, instead of the fixed amount of 52,500*l*. We feel that the proposition itself is an equitable one, and particularly when connected with the circumstance of the traffic proved having so far exceeded the amount stipulated.

As Mr. Brunel cannot at present re-estimate the cost of construction, and all the other additional costs are not yet ascertained, we ask for some explicit promise from you, that the question will be ultimately arranged upon the basis I have named; by so doing, I believe you will restore those feelings of confidence which we are anxious should exist between the Directors of both Companies.

I will further add, the settlement of this question will be attended with beneficial results, for I cannot withhold from you that considerable distrust has existed amongst a portion of our Board; that this proposition for an extension of the guarantee would not be met by the Directors of the Great Western Company, although I have never felt any myself.

I have, &c.,

Chas. Russell, Esq., M.P.

F. RUFFORD.

MY DEAR SIR,

27, Charles-street, St. James's, November 25, 1845.

I WILL bring your letter before our Board on the first day we meet. I fully admit the reasonableness of the grounds on which you apply for an alteration in the terms of our agreement, provided the increased amount of capital be not excessive, and that it is limited to some specific extent. Without such limitation I am satisfied our Board will not entertain the proposition, and I therefore think you will be wise to fix the amount as soon as you can. You may be assured of our readiness to go into the subject in the best spirit, and at the earliest period at which you will enable us to do so.

I have, &c.,

F. Rufford, Esq.

C. RUSSELL.

In consequence of this, Mr. Brunel, the engineer of the Company, was directed to make a revised estimate of the whole cost of the line, which he did in February, 1846, and it amounted to

To which were added, surveying, engineering, law, office and miscellaneous expenses paid to that date

Rent of offices, salaries, Directors' travelling, and miscellaneous expenses, three years at 5,000*l*.

And interest on capital at 4 per cent. (during the period of construction).

£.	s.	d.
2,257,366	0	0

76,548	0	0
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15,000	0	0
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150,000	0	0
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£ 2,498,914	0	0
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These estimates were furnished to the Great Western Company, and the Directors of that Company, at a meeting on the 10th of February, 1846, came to the following resolutions thereon:—

"The revised estimates on the Oxford, Worcester, and Wolverhampton Railway, furnished by Mr. Brunel to that Company, and delivered by Mr. Rufford as the basis of some modification of terms for the lease of that line by this Company, were carefully considered.

"The five documents received from that Company were ordered to be annexed to these minutes.

"The original agreement was referred to, and the whole subject being considered with reference to the means of constructing the line and works under the altered circumstances of cost, so as to carry out the main objects for which that Company was formed, and insure its completion for the interests of this Company,

"It was Resolved—

"That the sanction of the general meeting, to be held on the 12th instant, shall be applied for to authorize the Directors to enter into an agreement with the Directors of the Oxford, Worcester, and Wolverhampton Company, for modifying the terms and conditions of the lease, by extending the guarantee to such sum as may be necessary for the completion of the said

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railway and works, and fixing the rate of interest at 4 per cent. per annum, in lieu of 3½ per cent per annum.

"That if such sanction and authority be obtained from the general meeting, it will be expedient to increase the amount on which such guarantee shall be given, from 1,750,000*l.*, to a sum not exceeding 2,500,000*l.*, and to pay a minimum interest of 4 per cent. per annum, together with half the profits of the line, subject to the following conditions:—

"First,—That the new shares to be raised by the Oxford, Worcester, and Wolverhampton Railway Company shall be offered rateably in the distribution to the shareholders of the Great Western Railway, *pari passu* with those of the Oxford, Worcester, and Wolverhampton Railway Company, in proportion to their respective share capital at the time.

"Second,—That no works shall be undertaken, or any capital expended for purposes other than those which are comprised in the said estimates for the construction of the direct line of railway, and the usual and necessary stations, with the side lines referred to in the Act, unless the previous consent and approval by this Board shall have been given in writing under the hand of the chairman of the Great Western Railway Company for the time being."

On the 12th of February the following resolution was passed at a general meeting of the shareholders in the Great Western Railway Company:—

"That the Directors be, and they are hereby empowered to enter into an agreement with the Directors of the Oxford, Worcester, and Wolverhampton Railway Company, for modifying the terms and conditions previously arranged for the lease of the said line, by extending the guarantee to such sum as shall appear to them necessary for the completion of the said railway and works, and fixing the rate of interest at 4 per cent. per annum, in lieu of 3½ per cent. per annum, subject to such conditions as may seem to them equitable between the two Companies."

The last resolution was transmitted to this Company, and was entered in their minutes, and was also embodied in the report made by the Directors to the general meeting of the shareholders of this Company on the 27th February, 1846; but the minutes of the Directors of the Great Western Company do not appear to have been received by this Company, although the substance was verbally communicated to the chairman, Mr. Rufford.

Nothing further was done towards making any formal agreement between the Companies, both parties were much engaged in opposing rival schemes of railway in Parliament, and the matter remained where it was left by the foregoing application, and the resolutions of the Great Western Company passed thereon; but on the 11th of August following, in consequence of some remarks of shareholders, the matter came before the Directors of the Oxford, Worcester, and Wolverhampton Company, and the following minute was entered in their proceedings:—

11th August, 1846.—"The position of the Company with reference to the guarantee engaged to be given by the Great Western Railway Company having been taken into consideration,

"Resolved—That this Board deem it most advantageous to the interests of this Company that the arrangement should be allowed to remain in its present state, and that no more defined settlement should at this time be pressed for."

This resolution was entered into under the expressed verbal understanding with the Great Western Company that it would be better to wait until the entire cost of the railway could be more accurately ascertained, when the amount of such cost was to be taken as that to be guaranteed instead of 2,500,000*l.* It was on this ground that the matter was kept in abeyance, and under a condition on the part of the Oxford, Worcester, and Wolverhampton Directors that they could not, consistently with their duty to their shareholders, confirm any guarantee for a less sum than the entire cost of the line, which may exceed that sum, whilst if it fell short of it the Great Western Company would receive the advantage.

A correspondence took place soon after the general meeting of this Company, in August, 1846, between a shareholder in this Company and the chairman, which was ultimately laid before the Directors of the Great Western Company, and approved of by them, wherein the following answers given to the shareholder's queries:—

Will you be kind enough to answer the following questions? I put them on a separate paper to save you trouble, as you can write "No" or "Yes" to each, and return it to me. Does the guarantee of 4 per cent. extend over a sum sufficient to cover all the following items?

The whole preliminary expenses amounting to 74,679*l.* 2*s.* 6*d.*?—Yes.

The sums to be taken from the capital to pay 4 per cent. interest on deposits before the line is opened?—Yes.

All salaries, office and other incidental charges during the same period?—Yes.

In short, does it extend over all moneys raised either by shares or borrowing up to the time of the opening of the line throughout, or only to the actual cost of construction?—Yes, all these being part of construction.

Does it extend to the similar charges in respect of the branches for which we have obtained or are seeking to obtain Acts?—Yes.

Is the rent to be paid for the Stratford and Moreton Railway to be considered as any other money given for property or for compensation for damage, &c., and consequently to be included in the cost of construction, and paid by the Great Western? And if not, is it to be paid out of the 4 per cent. guarantee, or to be considered as part of the cost of working the line, or in what manner is it to be brought to account?—No, but considered as one of the expenses of working the line, all tolls arising from the tramway to be considered as profit.

And these questions and answers were read by the chairman at the next general meeting of shareholders in this Company, in February, 1847; for the express purpose of showing the

terms recognized by the Great Western Company as those upon which they were to become lessees of this railway.

Nothing further occurred with reference to the agreement between the two Companies for some time. Railway property became greatly depressed, and the means of obtaining additional capital to complete the line more and more difficult. With the view of placing the Company in a better condition to do so, the Directors, on the 10th of August, 1847, appointed a deputation of their Board to the Directors of the Great Western Company, for the purpose of requesting them to advance the interest or rent payable under their guarantee, from 4 to 5 per cent., but the Great Western Company declined to accede to the proposal.

The capital, under the Act of 1845, having been called up, except 5*l.* per share, the Directors saw that unless some means were adopted to raise additional capital, the works must come to a stand; and therefore, in the month of July, 1848, appointed another deputation to confer with the Great Western Company thereon. An interview took place between the deputations from each Company on the 18th August following. No means were devised as likely to produce the necessary capital; but the chairman of the Great Western Company suggested that it would be expedient to confine the expenditure of this Company to the portion of the line between Oxford and Worcester; and the Great Western deputation promised to consult Mr. Brunel, who was the engineer to both Companies, upon the point, and afterwards further consider the subject.

In all these discussions the interests of the two Companies had been considered as identical.

The following letter was subsequently received by the chairman of this Company from Mr. Brunel:—

MY DEAR SIR,

September 8, 1848.

I HAVE had some conversation with the Directors of the Great Western Railway, who I believe were deputed to confer with you as to the proceeding with the works on the Oxford, Worcester, and Wolverhampton Railway, and they appear to concur in the view, which I understand to be entertained also by your Directors, of the necessity of devoting the available funds of the Company to the earlier completion of some portion which can be rendered profitable. I have felt compelled to urge this very frequently; and I am still without instructions; and, consequently, no arrangements are yet made to diminish the expenditure upon any one portion of the line. I fear very much that unless some steps be immediately taken we shall get into very great difficulties, unless indeed, what I cannot conceive to be possible, the Company is likely to have an abundant supply of money to enable me to proceed with the whole line vigorously; but if, as I apprehend, there will be great difficulty in getting even a limited amount, we must devote this to the completion of some part that can be rendered profitable, and positively stop all expenditure on the rest. Now, although a great deal may be said in favour of several different portions of the line, yet you will find that the only one which, under existing circumstances, could be worked by the Great Western Railway with any profit, to pay rent to the Oxford, Worcester, and Wolverhampton proprietors, will be from Oxford to Worcester, and that by no means can you get a return worth considering, or which would repay the loss sustained by postponing the completion of the Oxford end. Let me beg of you to give me some authority to act, and to prevent the further waste of money upon such portion as you think we had better postpone. My conviction is, that you have no alternative but to suspend all expense beyond Stourbridge, and devote every sixpence you can raise to the south end of the line.

I have, &c.,

I. K. BRUNEL.

F. Rufford, Esq.

To which the chairman replied by the following letter:—

MY DEAR SIR,

Worcester, September 9, 1848.

I HAVE received your letter of yesterday's date. I am quite sure that my Board will be ready to concur in the conclusion to which you state that you have come with the Great Western Directors, that it is advisable to proceed with the works at the Oxford end of the line, and to adopt such arrangements as you may recommend for relaxing or, for the present, postponing those north of Stourbridge.

Our Board has, as you are aware, from the first acted entirely under your advice as to the letting of contracts and progress of the works; and I now undertake to confirm on their part such measures in this respect as you may think advisable, and as may receive the sanction of the Chairman of the Great Western Board, because, at the meeting which took place at Paddington on the 18th ult., between the deputations from the two Boards to consider the position of the Oxford, Worcester, and Wolverhampton Company, and the best means of raising further capital, it was arranged that Mr. Russell and Mr. Mills should consult with you as to the portion of the line on which it would be most advisable to concentrate our available funds.

I have, &c.,

R. RUFFORD.

I. K. Brunel, Esq.

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Both these letters were brought before the Board of Directors of this Company, who, in consequence, passed a resolution, That, in the opinion of the Board, it was desirable to prosecute the works between Worcester and Oxford in preference to those on that part of the line lying north of Worcester.

In the mean time a correspondence had arisen in consequence of the Chairman of this Company having, at the general half-yearly meeting of the Company in August, 1848, in answer to questions from shareholders present, asserted that the guarantee of the Great Western Company was intended to cover the whole cost of the line, whilst, according to a statement afterwards published, their liability was said to be limited to a guarantee of 4 per cent. per annum upon a capital of two millions and a-half only.

The answer of the Chairman was founded upon the idea always entertained and expressed, and no doubt fully intended by both parties up to that period, that the 'guarantee of the Great Western Company was to extend over the whole cost of the line, including interest upon capital and other expenses as cost of construction.

The application of November, 1845, and the mode in which it was met by the minute of 10th February, 1846, were conformable to that view, for, although the Directors of the Great Western Company stipulated for a limit, that limit was the sum then estimated to be sufficient to complete the line, as were also the respective sums named in the first instance in the preliminary agreements. It is quite consistent with this view of the case that the Great Western Company should not give authority for an unlimited expenditure over which they would have had no control; but had Mr. Brunel then named a larger sum, there can be no doubt it would have been agreed to.

It is confirmed by the answers to the shareholders' queries, which show distinctly that the guarantee was intended to cover the whole cost of the line, and which bear out the inference that, on the entire cost being ascertained, it was to be substituted for the 2,500,000*l.*, whether it amounted to more or less than this sum.

The Directors of this Company had, upon the faith of this understanding, in the years 1846 and 1847, given the Great Western Railway Company the benefit of their support and as an independent company in promoting lines of railway in the Great Western, or broad-gauge interest, and in opposing rival projects to a much greater extent than would have been consistent with any other terms of the proposed lease, and incurred therein much greater expenses and liabilities than they would have been justified in doing upon the question merely of how the half profits beyond the guarantee of the Great Western Company would be affected.

In this state of affairs the deputations from each Company met again on the 29th of September last, when the Great Western Directors denied their ever having engaged or intended to guarantee interest on a larger outlay for the cost of the line than 2,500,000*l.*; they admitted, however, that the cost of applications to Parliament for new branches and extensions, and of opposing the rival schemes of other Companies, was not to be included in that sum, but was to be separately provided for in accordance with the minutes of the Great Western Company of the 10th February, 1846, which were produced and read by the secretary to the meeting.

The Directors of the Great Western Company expressed their willingness to recommend to their Board that a fair proportionate rent should be given for such portions of the Oxford, Worcester, and Wolverhampton Railway, having an unbroken connexion with the Great Western Railway, as should from time to time be opened for traffic.

Upon a report of the foregoing interview being presented to the Directors of this Company, with the minutes of the Great Western Directors of the 10th February, 1846, which had then been received, at a Board meeting on the 3rd of October, 1848, they came to the following resolutions:—

"That the local Directors on this Board feel bound to declare that, although aware that the Directors of the Great Western Railway Company had, by resolutions, limited the guarantee of that Company to an amount then estimated to be sufficient, they, the local Directors, have, in their intercourse with the Great Western Railway Company, and in all their proceedings, acted under the conviction that the guarantee was intended to extend over such a sum as should be found necessary for the completion of the railway and works, including interest and expenses.

"That, under this impression, they have at the general meetings of the Company, in the presence of the Directors of the Great Western Railway Company, made repeated declarations and statements in reply to the inquiries of shareholders, that the guarantee would extend to the whole cost of the line, and ensure the payment of 4 per cent. interest to the original shareholders, and that no remonstrance nor observation to the contrary has at any time until the last month been made, either by the Directors present or by any other person, on the part of the Great Western Company.

"That, acting under the same impression, they have entered into various expensive Parliamentary contests, at the suggestion or with the concurrence of the Great Western Company, which they would not have been justified in doing, and would not have consented to undertake, except under the belief that the guarantee was intended to cover the cost of the railway and of such Parliamentary contests.

These resolutions were transmitted to the Great Western Company, and the following extract of minutes from their Board meeting of the 19th October, 1848, was received in reply:—

"The Chairman laid before the meeting the resolutions of the Local Directors of the Oxford, Worcester, and Wolverhampton Railway Company, dated the 3rd instant, together with a letter from Mr. Rufford to him, dated the 8th instant, on the subject of the guaranteed rent payable by this Company for the lease of that line.

"At the request of Mr. Barlow, and in consequence of Mr. Rufford having relied, in corroboration of the views expressed in the said resolution, upon some correspondence in the year 1846, between Lord Redesdale and himself, relating to the Birmingham and Oxford Railway, which had been shown at the time to the secretary of this Company, copies of the several letters (since furnished by Mr. Noel Smith), with a paper of queries sent back to Lord Redesdale on the 26th October, 1846, with answers approved by Mr. Saunders, were again read to this Board and carefully reconsidered.

"The whole subject was discussed, the minutes of the Board of the 10th February, 1846, and of the general meeting of the proprietors held on the 12th February, 1846, were referred to, and the circumstances of the several arrangements made with that Company were examined.

"The Chairman stated that he had acquainted the deputation of the Oxford, Worcester, and Wolverhampton Company, on the day after the last half-yearly meeting of this Company, that, in consequence of some doubts which had been supposed to exist on the subject, he had been again asked at that meeting whether the guarantee was limited or not in its amount, and that he had replied to the question by a reassurance to his proprietors that it was limited to a rent of 4 per cent. per annum on a sum not exceeding 2,500,000*l.*, besides half of the profits of the line itself.

"The chairman added, that he purposely made this communication in order to prevent any reasonable doubt on the minds of those gentlemen forming the deputation as to his construction of the agreement between the two Companies, and that he had made a written minute of the circumstance at the time, which was some days anterior to the last meeting of the Oxford, Worcester, and Wolverhampton Company.

"The more recent correspondence between the Chairman of the Oxford, Worcester, and Wolverhampton Company, and Mr. Mortimer, of the Stock Exchange, in relation to the affairs of that Company, was read, and the admission of the former, in his letter on the 16th of September, to the fact of the guarantee having been on a limited amount of expenditure, appears in the following paragraph of it, viz., The Directors of the Great Western Company could not have been expected to grant to us a guarantee upon an unlimited expenditure, over which they had no direct control, and we are not at the present time in a position to submit to them a proposal for an extended guarantee, as we have no facts before us on which to ground such an application, &c.

"It was resolved—

"That this Board having been required, by the resolutions of the Local Directors of the Oxford, Worcester, and Wolverhampton Company, to express, officially, an opinion as to the subsisting relations between the two Companies on the subject of the guaranteed rent, affirms distinctly that the Directors of this Company have uniformly and unequivocally refused to give to the Oxford, Worcester, and Wolverhampton Company any guarantee upon an unlimited expenditure; a proposal which, in each instance of the negotiations, had been suggested to them by the deputations whom they met to confer with, and the specific reasons for refusing which had been assigned by the Directors of this Company.

"That they also declined, in the years 1845-6, to entertain any application for an increase of the original limit, until both Companies should have ascertained, from revised estimates, what sum ought to be agreed upon as the maximum cost of the whole undertaking, embracing the alterations and additions to the work, &c., which had then been accurately ascertained after the Act had passed, which steps would have been quite unnecessary if the guarantee was to extend over any sum which might be expended by that Company.

"That, the minute of the Board of the 10th February, 1846, communicated to the Oxford, Worcester, and Wolverhampton Company, accurately records the terms which had been discussed and agreed to, and that no subsequent negotiations with, or application to, this Company has taken place, nor has any consent been given to vary or rescind these conditions.

"That, in the opinion of this Board, the personal attendance of any individual Great Western Director at a general meeting of the Oxford, Worcester, and Wolverhampton Company cannot be assumed, with fairness, to recognize an alteration of terms and conditions previously agreed upon between the two Companies merely because he may happen to hear from the Chairman or any other Director, their statement or opinions on a subject at variance with his own, without controverting or contradicting them.

"That this Board learning, however, with satisfaction, that Mr. Rufford had recently stated that he had never represented at any meeting that the guarantee was unlimited, considers that fact to be the best refutation of the charge on any Great Western Directors, that such alleged representations by the Chairman, while presiding at a meeting of his own Company, were left unnoticed by them, and this Board considers it at least unusual, if not unjustifiable, for an individual Director to offer any direct contradiction to, or confirmation of, statements or opinions so communicated to a general meeting of proprietors, unless he shall be distinctly appealed to at the time.

"That a careful re-perusal of the correspondence with Lord Redesdale, and of the list of questions and answers already referred to, convinces this Board that the guarantee was understood by all parties to be limited in its amount, instead of unlimited, and that nothing appears in these documents inconsistent with the subsisting agreement between the companies upon which the Great Western Company rely.

"That this Board cannot, however, in discussing those incidental points which have been raised, admit the principle which seems to be contended for by local Directors of the Oxford, Worcester, and Wolverhampton Company—that the acquiescence of any Board in the alteration of a material condition of an agreement distinctly rejected by themselves during negotiation, is to be subsequently inferred from the silence of any individual Director or officer of

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such Company—a principle which would be fraught with mischief and injustice to all parties interested.

“ ‘ Lastly, that this Board deems it essential, under all the circumstances of the case, in order to preserve friendly and honourable relations with the Oxford, Worcester, and Wolverhampton Company, that the question which has been thus raised should be now finally determined; viz., Whether the guarantee of this Company is or is not fixed at a definite and limited expenditure, not exceeding 2,500,000*l.* for the whole railway and works sanctioned by the Act 8 and 9 Vict., c. 184, which guarantee is to entitle this Company to a perpetual lease of the said railway, half of the profits of such line being paid in addition to the guaranteed rent.’ ”

With the view to adopt the suggestion of the partial opening of the line, Mr. Brunel was instructed to prepare a detailed estimate of the cost of the railway divided between certain points, which he did; the total estimate of the cost of the line, exclusive of the Kingswinford and Worcester branches, but including extra work at Wolverhampton, under the Act of 1848 (Bill 2), estimated to be equivalent to the cost of those branches, exceeded the estimate of February, 1846, by about 250,000*l.*

The deputations of the two Companies met again on the 8th November, when the Chairman of the Great Western Company intimated that they would not further treat until the Directors of the Company admitted that the guarantee was limited to 4 per cent. per annum on 2,500,000*l.*, and half surplus profits.

Some indirect attempts at negotiation between members of the two Companies took place, but no other meeting of the deputations was had; and the Directors of this Company, feeling the difficulty of their position, and that the only probable means of raising further capital was by an arrangement with the Great Western Company to rent or lease such portion of the line as was likely to be completed at a meeting preliminary to their half-yearly general meeting, on the 23rd February, 1849, came to the following resolution:—“ That, if the report of the Directors to the general meeting of shareholders this day be adopted, the deputation shall be authorized to recognize the minutes of the Great Western Railway Board of 10th February, 1846, as the basis of the existing agreement between the two Companies; that the deputation be requested to confer with the Great Western Railway Company as to the details of such agreement, and particularly with a view to provide for a partial opening of the railway, at such rent and upon such terms as they shall think most advantageous, subject to the confirmation of a special meeting of the proprietors of this Company.”

After this submission to the condition annexed by the Great Western Company to any further negotiation, a meeting of the deputations from the two Companies was held at Paddington, on the 6th of March last, when the Directors of the Great Western Company virtually put an end to any further idea of a division of the entire rent, by declining to accept any portion of the line which it was in the power of this Company to complete short of the whole railway.

The following minutes of the Great Western Board were afterwards transmitted to the Oxford, Worcester, and Wolverhampton Company:—

Paddington, March 8, 1849.

“ The Chairman reported to the Board that a conference as suggested had been held with a deputation of the Oxford, Worcester, and Wolverhampton Company, at this station, on the 6th instant, at which they proposed to this Company a modification of the agreement for the lease of their line, having previously recognised, by a minute of the 23rd of February, that the terms and conditions recorded in the minute of the Great Western Railway Board, dated 10th February, 1846, from the basis of the existing agreement between the two Companies.

“ The Directors of the Oxford, Worcester, and Wolverhampton Company stated, that the difficulties of their present position rendered it most desirable that the Great Western Company should undertake to lease that portion of line between Oxford and Stourbridge as soon as it shall be finished, paying a fixed rent for the same, estimated at 84,000*l.* for eighty-two miles of railway, being in proportion to 100,000*l.* for ninety-seven miles and a half, which was represented by the deputation to be the total mileage of their railway.

“ The estimate now made of the expenditure, for the entire completion of that portion of railway between Stourbridge and Oxford, was stated to be 2,080,000*l.*

“ The Chairman reported further, that after a consultation with his colleagues, who were present at that conference, he had apprised the deputation of the Oxford, Worcester, and Wolverhampton Company, that in their opinion the Great Western Company could not be justified in undertaking to pay such affixed rent for a portion of their railway, scarcely reaching the verge of that district from which, almost exclusively, the mineral and manufacturing trade of the line must be expected to come, without even a junction with any northern railway, and consequently so deprived besides of the means of receiving traffic from any other district.

“ The Chairman stated that he thereupon suggested to the deputation, as the only method which had occurred to the Great Western Directors of meeting their views, that it might be practicable to obtain the consent of the Great Western proprietors to adopt an arrangement similar to that agreed with the South Wales Company, by which they are to work any portion of line, while partially opened, for the benefit and risk of the owners, until the fixed rent shall become payable in respect of the whole line under the terms of the lease.

“ The deputation did not consider any such plan likely to be satisfactory to the shareholders in the Oxford, Worcester, and Wolverhampton Company, and therefore requested that some definite answer might be given to their proposal. It was subsequently suggested by one member of the deputation, that if the partial opening between Oxford and Stourbridge should appear to

be objectionable to the Great Western Company, they might be induced to entertain the same question upon the principle of the line being finished to Dudley.

The whole subject thus brought under discussion at the conference was very fully considered by the Board; and the relative position of the two Companies, with the probable effect of such modifications of the existing agreement on their respective interests, were carefully reviewed.

"It was resolved,—

"That this Board with great regret feel compelled to decline the proposal made to them on behalf of the Oxford, Worcester, and Wolverhampton Company, as quite incompatible with the just and equitable rights of their proprietors, being calculated materially to increase their risk, while it would deprive them of the principal traffic on which this Company has always relied as the consideration for the rent they engaged to pay for the whole line.

"That the Directors will be prepared to recommend to their proprietors to work the portion of railway up to Stourbridge, if it shall suit the Oxford, Worcester, and Wolverhampton Company to finish it, handing over to them the net profits of the line after defraying all the working and contingent expenses, and interest, and depreciation on the stock to be provided; or if an arrangement can be made of a binding and satisfactory character with the London and North Western Railway Company, for the perpetual right of use of broad-gauge rails over the Stour Valley Line between Tipton and Wolverhampton, and for the use of a joint station at the latter place, upon equitable terms, the Directors of this Company will be prepared to entertain the question of a modified lease between Tipton and Oxford, subject to fair and proper allowances or reductions in respect of the abandoned portion of railway, having regard also to the conditions upon which the substituted right over the Stour Valley Line may be obtained.

"That it is essential, however, under existing circumstances, in suggesting any such general outline of a proposition to guard against the inference that the Board thereby commit themselves or the Company to the final adoption of any such plan until the terms and conditions of it shall have been fully and entirely discussed, considered, and settled, nor until the sense of their proprietors, at a special meeting, shall have been taken upon the arrangement previously recommended to them by the Board, as just and equitable between the two Companies."

This appears to your Directors to be an elaborate attempt to avoid the performance of that which the deputation of the Great Western Company had stated they would recommend to their Board, viz., to pay a fair proportionate rent for such portions of the line having an unbroken connexion with the Great Western Railway as should from time to time be opened for traffic, which was the principal inducement to the Directors of this Company to pass the resolution of the 23rd of February, 1849, for the part put prominently in these resolutions being the northern end of the line, is precisely that portion which cannot be worked in connexion with the Great Western Railway until the whole of this railway is made.

Your Directors are compelled by these circumstances to entertain the conviction that the Directors of the Great Western Company have no real desire to assist this Company out of its present position, and seeing no prospect of any arrangement with them that will have that effect, your Directors, agreeably to their promise made to the shareholders at the last general half-yearly meeting, have determined to call a special general meeting of the proprietors, and to lay before them a succinct statement of all the facts and circumstances connected with their engagement to the Great Western Company.

The principle contended for by your Directors with reference thereto is, that it was always the intention of both parties that the guarantee or rent should cover the whole cost of construction and incidental expenses.

That it was reasonable for the Great Western Company to limit the amount to such a sum as was for the time ascertained to be necessary for those purposes, and not leave an uncontrolled authority for expenditure in the hands of the other party.

But as soon as it was ascertained that the sum so fixed was insufficient for the purpose, the guarantee or rent was to be extended as occasion required to effect the object of the parties. so that when the railway was completed, the lease to be granted under the agreement should reserve a rent equal to four per cent. on the whole cost then ascertained.

This view of the case is consistent with the Chairman's letter to Mr. Mortimer, to which allusion is made in the resolutions of the Directors of the Great Western Company with other correspondence and statements by him at the general meetings of shareholders, and, as your Directors consider, is the only construction with which the proceedings of both Companies can be reconciled.

The Directors submit to the shareholders the following alternatives for adoption in their future proceedings:—

1st. To carry out the agreement with the Great Western Company for a guarantee of four per cent. on an expenditure not exceeding 2,500,000*l.*, which is left open for the sanction of the shareholders of this Company, or to decline such an agreement, and leave the Company at liberty to act independently in such way as the interests of the shareholders may require.

2ndly. To complete that portion of the railway farthest advanced, and open the same for traffic by this Company.

3rdly. To obtain the assistance of any other Company in the completion of the railway, or a portion or portions thereof, and to let the same wholly or jointly; and

4thly. To make application to the Railway Commissioners, requesting them to enforce the completion of the railway by the Great Western Company.

In considering the first of these alternatives, it must not be lost sight of that this line of

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railway is laid out for connexion and working continuously with the Great Western Railway, and its construction is provided for by the Act of Parliament upon the same gauge; nor should it be forgotten that but for the assistance and support of the Great Western Company, this Company would never have had existence, that the support and assistance once given was not withdrawn under very adverse circumstances, but was continued actively and zealously until the passing of the Bill was accomplished.

It was the feeling which the knowledge of these circumstances produced that actuated your Directors in repelling the attempts to repudiate the connexion with the Great Western Company made by shareholders at several general meetings; and so long as they believed in the good faith of the Great Western Company in carrying out the original understanding and intention that the guarantee should extend to the whole cost of the line, they felt bound, upon every principle of honour and good faith, to oppose any attempt to sever that connexion; but that belief having been clearly extinguished by the recent proceedings of the Great Western Company, they consider that the shareholders at the present meeting are at full liberty to deal with the property as they may think most conducive to the interests of the Company.

And it must be obvious that the Directors cannot recommend to the shareholders to complete an agreement for a lease upon the only terms at present proposed, the effect of which would be to bind this Company to the Great Western Company and its policy without the power of extrication.

The second alternative involves the question of money. Your Directors have no doubt that if the third alternative be adopted, and a satisfactory conditional arrangement can be made with any other Company to rent a portion of the railway, that funds may be obtained sufficient to complete the line from Tipton to the Birmingham and Bristol Railway at Abbotswood, and the branch to Stoke Works forming the deviation of that line.

The completion of this part of the main line would bring it in connexion with the northern system of railways, and it is obvious that it would be so much to the interest of those Companies to avail themselves of the facility which could be afforded by this line, that there is little doubt some arrangement beneficial to all parties may be made.

The Company has power, by an Act obtained last year, to raise further capital by the issue of new shares, but the low price of the present shares prevents the exercise of that power; and there being no authority for issuing preferential shares, the only mode your Directors can suggest for raising money at the present moment is by loans from the shareholders on debentures at 5% per cent., which would practically give the parties advancing a preference to that extent. The Company has power under their first Act to borrow 500,000*l.*, of which about 140,000*l.* has been raised.

Upon the last alternative that has been named, the Directors have only to observe, that the objections which readily present themselves to such a mode of completing the railway in the present state of the relations between the two Companies, render it inexpedient to have recourse to such a step until every other means have been tried and prove unavailable.

In conclusion, your Directors beg to state that, in the exercise of the powers confided to them by the shareholders, they have endeavoured to steer an upright and honourable course, consulting on all occasions the interests of this Company, so far as they were compatible with the understood engagements with other parties, adhering to those engagements in defiance of attempted repudiation, so long as they had reason to believe the terms would be faithfully observed, and continuing friendly relations with the parties with whom they first entered into alliance, and which they are still desirous to preserve as long as they can do so consistently with the equitable rights and interests of the shareholders in this Company, which they consider themselves bound to direct their best exertions to maintain inviolate.

And although the terms of the Act incorporating this Company restrict the character of the railway to a conformity with that of the Great Western Company, yet your Directors have no doubt that the same local influence which was mainly instrumental in obtaining the original Act would be again exercised in obtaining from Parliament any modifications which may tend to serve the interests of the district affected by the course of the line.

Worcester, June 1, 1849.

SIR,

Worcester, November 9, 1849.

WITH reference to what passed at the interview of a deputation from this Board with the Commissioners of Railways, on the 1st instant, I am desired by the Directors to transmit to you, for the information of the Commissioners, a copy of the Case submitted by this Company to James Russell, Esq., Q.C., and his opinion thereon,—

A copy of the propositions made in September last on the part of this Company to the Great Western Railway Company, and to state that no shares have been created under any of this Company's Acts, except the 30,000 under the Act of Incorporation, mentioned in my letter to you, dated the 30th ultimo.

I have, &c.,

NOEL THOMAS SMITH,
Secretary.

Capt. Harness, R.E.,
&c. &c.

CASE of the OXFORD, WORCESTER, and WOLVERHAMPTON RAILWAY COMPANY.

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See the Act of 8 Victoria (1845), by which the Company was incorporated, and the subsequent Acts relating thereto, 9 Victoria (1846), 11 and 12 Victoria (1848), Bill No 1, and 11 and 12 Victoria, Bill No. 2, herewith.

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In the spring of the year 1844 several gentlemen in the district of South Staffordshire, anxious to obtain better railway accommodation than was at that time afforded them by the Grand Junction Railway, the only one then passing through the district, and the London and Birmingham Railway, with which it was in connexion, and has since been amalgamated, under the name of the "London and North Western Railway," united with gentlemen residing in or near the towns on the proposed line of railway in a scheme for making a railway from the Great Western Railway at Oxford to Worcester and Wolverhampton.

In furtherance of this object the parties engaged made application for assistance and support to the Great Western Railway Company, who gave it; and after some negotiation, during which the necessary preliminaries for an application to Parliament were being prosecuted, a provisional agreement was, on the 15th August, 1844, entered into between the Directors of the Great Western Company of the one part, and the Committee of Management of the Oxford, Worcester, and Wolverhampton Railway Company of the other part, whereby the Directors of the Great Western Railway Company agreed to guarantee to the Oxford, Worcester, and Wolverhampton Railway Company an annual payment of 35,000*l.* as a permanent rent for a lease of the projected railway, and to pay over a moiety of the annual profits, after deducting the rent and all the expenses of working the line.

The Great Western Railway Company also agreed to use their exertions and influence to obtain a Bill in the next session of Parliament, at the expense of the Oxford, Worcester, and Wolverhampton Railway Company; but, as conditions precedent to their obtaining the sanction of their proprietors, the Great Western Railway Company required proof—

1st. Of a traffic of 75,000*l.*

2nd. That two-thirds of the landholders in length of the line were consenting or neutral.

3rd. The approbation of the Board of Trade.

4th. A *bonâ fide* subscription list to the extent of 600,000*l.*

The Oxford, Worcester, and Wolverhampton Railway Company agreed to those conditions, and undertook to provide satisfactory proof thereof, or, in case of failure, to absolve the Directors of the Great Western Company from all engagements of guarantee or other assistance.

The Great Western Directors agreed to convene a special meeting of their proprietors at the earliest period, after due proof of the four specific requirements above referred to, and to recommend the sanction of the Company to be given at such special meeting to a formal agreement under their corporate seal, it being understood that the Act to be applied for should contain all requisite powers for giving legal effect to the lease and guarantee.

The above agreement was executed by the Chairman, Vice-Chairman, and three other Directors of the Great Western Company, and by five of the Provisional Committee of the Oxford, Worcester, and Wolverhampton Company.

After the signing the above agreement, an alteration was made in the course of the main line of the intended railway, by carrying it in a direct line from Oxford to Worcester, instead of passing near the town of Banbury, as had been originally contemplated, and as this involved an increase in the length of railway to be made by the Oxford, Worcester, and Wolverhampton Railway Company, negotiations took place between them and the Great Western Railway Company for an alteration in the terms of the agreement before entered into.

The new terms agreed upon were embodied in another agreement, dated the 20th September, 1844, expressed to be made between the Directors of the Great Western Railway Company of the one part, and Francis Rufford, William Mathews, and George Benjamin Thorneycroft, three of the Committee of Management of the Oxford, Worcester and Wolverhampton Railway Company of the other part.

By which, after reciting the former agreement, and that by the alteration of the line an increase of capital was become necessary, and also stating, that at a meeting of the Directors of the Great Western Railway Company, held that day at Paddington, the matter had been discussed with the deputation of the Oxford, Worcester, and Wolverhampton Company, and the alteration of the line and the increase of capital assented to.

It was agreed that the capital should be 1,500,000*l.*

That the Directors of the Great Western Company should guarantee to the Oxford, Worcester, and Wolverhampton Railway Company an annual payment of 52,500*l.* subject, as thereafter mentioned, as a permanent rent for 999 years' lease of their projected railway, with a double line of broad-gauge rails, complete with stations and every requisite convenience for traffic, commencing from or near to the city of Oxford, and terminating at Wolverhampton, with a junction with the Grand Junction Railway.

The line was to be laid and formed in the direction mentioned in the prospectus thereunto annexed, or as near thereto as circumstances would admit of, with branches to Kingswinford district, to Stourbridge, to the Stoke Alkali Works, and to the River Severn at Worcester.

In addition to the fixed rent of 52,500*l.*, the Great Western Company agreed to pay over a moiety of the annual profits, after deducting the rent and all the expenses attending the working of the line.

And in the event of it being found impracticable to complete the railway within the amount of 1,500,000*l.*, and any further sum was required for that purpose, it was agreed that if any clear profit was realized after paying the rent and working expenses, the same should be first liable for the payment of the interest on such surplus expenditure, not exceeding 250,000*l.*,

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and a moiety of the balance only of such profits, after deducting such interest, should be paid over to the Oxford, Worcester, and Wolverhampton Railway Company.

That in the event of the 1,500,000*l.* not being expended in the formation of the line and branches, then that a proportionate deduction should be made from the rent of 52,500*l.*

That the traffic required by the Great Western Railway Company, to be shown according to the conditions contained in the recited agreement, should be 131,250*l.*, instead of 75,000*l.*, and the subscription list 900,000*l.*, instead of 600,000*l.*

That all the other terms and stipulations of the recited agreement should remain in force, except as altered by the subsequent arrangement.

This second agreement was signed by the Directors of the Great Western Railway Company, but not by any of the Provisional Committee, or any other person on behalf of the Oxford, Worcester, and Wolverhampton Company, although the terms were fully understood and assented to by them.

As soon as this further arrangement had been made, the amended prospectus referred to in the last-mentioned agreement was issued and generally circulated through the country, which, after stating the advantages of the line and the traffic to be expected, contains the following paragraph:—

“In addition to these claims on public attention and support, the Committee of Management have concluded an arrangement with the Directors of the Great Western Railway Company conditional on the necessary preliminaries for proceeding with the Bill in Parliament, being completed and subject to the sanction of their proprietary, by which a guarantee of 3½ per cent. per annum on the estimated capital, with half the surplus profits, will be secured to the shareholders in this undertaking. And in the event of its being found necessary to expend a greater sum than 1,500,000*l.* in constructing the line (but which amount is estimated to be more than sufficient for the purpose), the Directors of the Great Western Railway Company have agreed that interest on such additional amount, provided the same does not exceed 250,000*l.*, shall be paid previous to any division of profits being made.”

By the subscribers' agreement, dated 1st October, 1844, preparatory to an application to Parliament, and ultimately executed by all the shareholders in the Company, it was provided—

That the Provisional Committee of the Oxford, Worcester, and Wolverhampton Railway Company should be at liberty, and should have full power to enter into any bargains, contracts, arrangements or agreements with landowners, railway or canal companies, corporations, and promoters of other similar or competing schemes which might, in their judgment, be advisable for facilitating the obtaining of an Act of Parliament and for the accomplishment of the aforesaid railway communication, or any part or parts thereof, and to agree with others desirous to obtain powers to lease, take, or execute the whole or any part or parts of the same line of railway, either to grant to them a lease thereof, or to surrender to them the same, or any part or parts thereof, or to permit them to hold stock in this undertaking, and to have such control in the management thereof as may appear reasonable, or otherwise as to the said Committee may seem advisable.

“And particularly to enter into and make with the Great Western Railway Company such further agreements and arrangements in Parliament, and otherwise for carrying into effect the two several agreements already entered into between the Directors of the said Company and the said Managing Committee, dated the 15th day of August and 20th day of September, 1844 (and which said several agreements the said parties hereto hereby approve of, ratify, and confirm), for the purpose of leasing to the said Great Western Railway Company the railway and undertaking hereby contemplated, upon such terms and with such modifications in, and deviations from, the stipulations contained in the said several agreements of the 15th day of August and the 20th day of September, 1844, and generally in such manner as may seem advisable to the said Managing Committee, and may be arranged and agreed upon between them and the said Great Western Railway Company.”

And in pursuance of any such agreement, contract, or arrangement, or otherwise for any of the purposes, to make application to Parliament for, or to consent to the introduction by Parliament of, any such clauses and provisions in any Act of Parliament for which application may be made, as aforesaid, as to the said Managing Committee may seem proper and desirable, and to take such proceedings in Parliament or elsewhere as they may deem expedient.

This was the relationship of the two companies to each other at the time of going to Parliament in the session of 1844-5, when what was called The Battle of the Gauges was fought, upon the Bill introduced by the Oxford, Worcester, and Wolverhampton Company, which gradually assumed the appearance of, and, in fact, became a contest, between the Great Western Company and the London and Birmingham Company, who were the projectors of a rival line of railway to occupy the same part of the country.

The conditions required by the agreements between the two companies for the support and assistance of the Great Western Company were entirely disregarded, for not only was there not two-thirds of the landholders assenting or neutral, nor a sufficient subscription list, but the Board of Trade, to whom the several railway schemes of that session were referred, reported against the Oxford, Worcester, and Wolverhampton line, and in favour of the rival project; yet the Great Western Company pursued the measures, and from auxiliaries, to all intents and purposes, became principals in the prosecution of the Bill. They completed the subscription contract, and provided the necessary deposit for going to Parliament, and, in fact, everything was done under their advice and direction.

The Great Western party were ultimately successful, and the Act incorporating the Oxford, Worcester, and Wolverhampton Company received the Royal assent on the 4th of

August, 1845. By sec. 4 the capital of the Company was 1,500,000*l.*, with power, by sec. 9, to borrow 500,000*l.*

By secs. 11 and 12, powers were taken by the Great Western Company to subscribe not exceeding 750,000*l.*, and to raise the money by shares or loans. Sec. 13 authorizes them to vote at the meetings of the Company, except upon questions relating to the sale, lease, or working of the railway by the Great Western Company; and sec. 17 authorizes the appointment of six Directors of the Great Western Company as Directors under this Act.

By sec. 38 it is provided that the railway should be completed on the same gauge and construction as the Great Western Railway.

By secs. 94 to 110 inclusive, the Great Western Company are united with the Oxford, Worcester, and Wolverhampton Company in a guarantee to the Severn Navigation Commissioners to make up the tolls upon that river 14,000*l.* per annum, to come into operation upon the opening for goods traffic of any part of the railway or branches between Worcester and Wolverhampton.

By secs. 128 and 129, power is given to lease or sell and convey the railway to the Great Western Company; and by sec. 130 it is enacted, that it shall be lawful for the Company thereby incorporated, and for the said Great Western Railway Company, to make and enter into such contracts or agreements for effecting the purposes aforesaid, or for otherwise working or using the said railways or any of them, or any part or parts thereof respectively, or for the maintenance and repair thereof, or any part or parts thereof respectively, as they, the said Companies, may respectively deem advisable, and subject to such terms and conditions as may be mutually agreed on between them. "And any contract or agreement made before the passing of this Act for all or any of the purposes aforesaid by the Provisional Committee of the Company hereby incorporated, and the Directors of the said Great Western Railway Company, with the sanction of any general meeting of the said last-mentioned Company, shall be as valid and binding in every respect as if made subsequently to the passing of this Act, and in conformity with the provisions thereof."

By sec. 31 it is recited that the Great Western Company were willing to undertake in case of need the due completion of the railway by that Act authorized and the branches thereof. And it is enacted, that in the event of the Company thereby incorporated failing to complete the said railway and branches within the period limited by that Act, by neglecting at any time to proceed therewith in such manner as to afford a reasonable security for the completion thereof within the aforesaid period (five years), it should be lawful for the Great Western Railway Company, after giving one month's notice of their intention so to do, to enter upon the said railway, and to proceed with the construction thereof, and to exercise all or any of the powers of the Company thereby incorporated in relation thereto. "And if at any time the said Company hereby incorporated shall, in the opinion of the Board of Trade, fail to proceed with the construction of the said railway in manner aforesaid, the said Great Western Company shall, on being required so to do by the said Board, enter upon the said railway, and shall complete the same as aforesaid. And in such event it shall not be lawful for the Company hereby incorporated, or the Directors thereof, at any time from and after such entry as aforesaid, unless with the special consent of the said Board of Trade, to declare, make, or pay any interest or dividend upon any of the shares in the said undertaking, or to the holders or proprietors thereof, until after the whole of the said railway shall have been constructed and opened for public use."

It may be taken that the Great Western Company were not only the active promoters of the Bill generally, but that the particular clauses, especially those relating to the powers of the Great Western Company, were prepared and inserted in the Bill on their behalf by the parties acting for them; and as to the clauses entailing liabilities on that Company, such as the Severn Navigation guarantee, that they were settled and approved of by them.

By the Act of 9 Vict., 1846, the Oxford, Worcester, and Wolverhampton Company were authorized to make branches from their main line to Witney and to Stratford-upon-Avon; and by the subsequent Act, 11 and 12 Vict. (1848), Bill No. 2, the Company were empowered to make an alteration and deviation of the original line at the town of Wolverhampton, and to form a joint station there with other parties.

By each of these Acts the provisions contained in the first-mentioned Act were extended to the several objects and purposes of the subsequent Acts, as fully and effectually as if the same provisions were re-enacted. By the Act 11 and 12 Vict. (1848), Bill No. 1, the Oxford, Worcester, and Wolverhampton Company were empowered to raise by shares any sum not exceeding 750,000*l.*, and to borrow to the extent of 250,000*l.* in addition to and beyond the capital provided for the particular works to be executed under the branch and extension Acts of 1846 and 1848 above mentioned.

By sec. 3 it is enacted, "That the capital so to be raised by the creation of new shares shall be divided into shares of such amount as will conveniently allow the same to be allotted or apportioned in such manner and upon such terms as may have been or may be agreed upon at any ordinary or extraordinary meeting of the Company, and shall be considered as part of the original capital of the Company, and shall be subject to the same provisions in all respects, whether with reference to the payment of calls or the forfeiture of shares, on non-payment of calls or otherwise, as if it had been part of the original capital, except as to the amount of such shares, which shall be determined as hereinbefore provided, and except also as to the times of making calls on such shares, and the amount of such calls, which, respectively, it shall be lawful for the Directors of the Company from time to time to fix as they may think fit."

The only resolution which appears to have been come to at any of the general meetings of the shareholders of the Great Western Railway Company after the making of the agreements

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of August and September, 1844, and before the passing of the Act of 1845, is the following, which was made at the general half-yearly meeting on the 18th February, 1845:—

"That the Directors be and they are hereby empowered to take all necessary steps for applying to Parliament; either in their own names or separately or jointly, with any corporation or persons for Bills for making railways between Standish and Ross, Monmouth and Hereford, with a branch into the Forest of Dean, and from Oxford to Worcester and Wolverhampton, with branches therefrom to Kingwinford and the Stoke Alkali Works, and to agree with any person or persons who shall apply to Parliament for such Bills for the construction of or for taking on lease or use such railways or any part thereof when made either by guarantee or otherwise, and upon any such terms and conditions as may be agreed upon for such purpose."

At the first meeting after the Act came into operation on the 6th August, 1845, the Directors of the Oxford, Worcester, and Wolverhampton Railway came to the following resolution, which was entered on their proceedings:—

"Resolved, that the following Resolution, entered on the Minutes of the proceedings of the Provisional Committee at their meeting on 28th June, 1845, be now confirmed, viz.:—

"That Messrs. Rufford, Mathews, and Thorneycroft be appointed a Committee, with full power to enter into and conclude all necessary arrangements with the Great Western Railway Company, for the lease of this line to them on the terms and stipulations already agreed upon, and to enter into, make, and execute all such deeds as may be necessary for the purpose."

On the 20th of August, upon the question confirming the preceding resolution, the following resolution was come to:—

"That the minutes of the meeting of 6th August be confirmed except so far as to any question which may arise as to the intent, meaning, and construction of any agreements or arrangements entered into with the Great Western Railway Company now under consideration, and which have been referred to the chairman, Mr. Thorneycroft, and Mr. Matthews, for arrangement with that Company, on such terms as those gentlemen may deem proper."

About this time it became evident to all parties concerned that the capital of 1,500,000*l.*, provided by the Act, would be insufficient for the construction of the railway. During the progress of the Bill through Parliament, the making of side lines upon a considerable portion of the railway, and other additional works, had been imposed upon the Company; besides which both materials and labour had greatly advanced in price in consequence of the number of railway Bills passing through Parliament.

It became, therefore, necessary to have an understanding with the Great Western Company for the enlargement of their guarantee to a sum sufficient to cover the cost of the line as originally contemplated; and the following correspondence for that purpose took place between the chairmen of the two Companies:—

MY DEAR SIR,

Bellbroughton, November 22, 1845.

I AM requested to submit to the Directors of the Great Western Company that they should take into their consideration the fact that this Company will be subject to large additional expenditure in the construction of this railway from a variety of causes not estimated by Mr. Brunel when he calculated the total expenditure requisite at 1,500,000*l.* Amongst other unexpected costs, I may name the extent of the preliminary expenses, which have been rendered very great from the Parliamentary contest, the large sums to be paid to opposing landowners, two double lines of railway to be laid down instead of three rails between Wolverhampton and Abbotwood, and the side lines which were forced upon us in Committee.

The traffic proved being 219,000*l.* after the rates had been reduced to the present, and not the rates existing when the agreement was made, the amount required to be proved being 131,250*l.*, our Board trust that the Great Western Company will increase the amount of the rent to 3½ per cent. upon the legitimate expenditure, instead of the fixed amount of 52,500*l.* We feel that the proposition itself is an equitable one, and particularly when connected with the circumstance of the traffic proved having so far exceeded the amount stipulated.

As Mr. Brunel cannot at present re-estimate the cost of construction, and all the other additional costs are not yet ascertained, we ask for some explicit promise from you that the question will be ultimately arranged upon the basis I have named; by so doing I believe you will restore those feelings of confidence which we are anxious should exist between the Directors of both Companies.

I will further add, the settlement of this question will be attended with beneficial results; for I cannot withhold from you that considerable distrust has existed amongst a portion of our Board that this proposition for an extension of the guarantee would not be met by the Directors of the Great Western Company, although I have never felt any myself.

I remain, &c.,

Charles Russell, Esq., M.P.

F. RUFFORD.

27, Charles-street, St. James's,

November 25, 1845.

MY DEAR SIR,

I WILL bring your letter before our Board on the first day we meet. I fully admit the reasonableness of the grounds on which you apply for an alteration in the terms of our agreement, provided the increased amount of capital be not excessive, and that it is limited to some:

specific extent. Without such limitation, I am satisfied our Board will not entertain the proposition; and I therefore think you will be wise to fix the amount as soon as you can. You may be assured of our readiness to go into the subject in the best spirit, and at the earliest period at which you will enable us to do so.

F. Rufford, Esq.

Believe me, &c.,
C. RUSSELL.

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In consequence of this, Mr. Brunel, the engineer of the Company, was directed to make a revised estimate of the whole cost of the works on the line, which he did in February, 1846, and it amounted to

£2,257,366 0 0

To which were added—

Surveying, engineering, law, office, and miscellaneous expenses, paid to that date	76,548 0 0
Rent of offices, salaries, directors' travelling and miscellaneous expenses; three years, at 5,000 <i>l.</i>	15,000 0 0
And interest on capital at four per cent.	150,000 0 0
	<hr/>
	£2,498,914 0 0

These amounts were furnished to the Great Western Company; and the Directors of that Company, at a meeting on the 10th February, 1846, came to the following resolutions thereon:—

"The revised estimates on the Oxford, Worcester, and Wolverhampton Company, furnished by Mr. Brunel to that Company, and delivered by Mr. Rufford as the basis of some modification of terms for the lease of that line by this Company, were carefully considered.

"The five documents received from that Company were ordered to be annexed to these minutes.

"The original agreement was referred to, and the whole subject being considered with reference to the means of constructing the line and works under the altered circumstances of cost, so as to carry out the main objects for which that Company was formed, and insure its completion for the interests of this Company."

It was resolved,—

"That the sanction of the general meeting to be held on the 12th instant shall be applied for to authorise the Directors to enter into an agreement with the Directors of the Oxford, Worcester, and Wolverhampton Company for modifying the terms and conditions of the lease by extending the guarantee to such sum as may be necessary for the completion of the said railway and works, and fixing the rate of interest at 4 per cent. per annum, in lieu of 3½ per cent. per annum.

"That if such sanction and authority be obtained from the general meeting, it will be expedient to increase the amount on which such guarantee shall be given from 1,750,000*l.* to a sum not exceeding 2,500,000*l.*, and to pay a minimum interest of 4 per cent. per annum, together with half the profits of the line, subject to the following conditions:—

"1st. That the new shares to be raised by the Oxford, Worcester, and Wolverhampton Railway Company shall be offered ratably in the distribution to the shareholders of the Great Western Railway *pari passu* with those of the Oxford, Worcester, and Wolverhampton Railway, in proportion to their respective share capital at the time.

"2nd. That no works shall be undertaken, or any capital expended for purposes other than those which are comprised in the said estimates for the construction of the direct line of railway, and the usual and necessary stations, with the side lines referred to in the Act, unless the previous consent and approval by this Board shall have been given in writing under the hand of the Chairman of the Great Western Railway Company for the time being."

On the 12th February the following resolution was passed at a general meeting of the shareholders in the Great Western Railway Company:—

"That the Directors be, and they are hereby empowered to enter into an agreement with the Directors of the Oxford, Worcester, and Wolverhampton Railway Company for modifying the terms and conditions previously arranged for the lease of the said line, by extending the guarantee to such sum as shall appear to them necessary for the completion of the said railway and works, and fixing the rate of interest at 4 per cent. per annum, in lieu of 3½ per cent. per annum, subject to such conditions as may seem to them equitable between the two Companies."

This latter resolution was transmitted to the Oxford, Worcester, and Wolverhampton Company, and was entered in their minutes, as it was also embodied in the report made by the Directors to the general meeting of the shareholders of the latter Company in the same month; but the minutes of the Directors of the Great Western Company do not appear to have been received by the Oxford, Worcester, and Wolverhampton Company, although the contents were verbally communicated to the chairman, Mr. Rufford, and other Directors of the Company.

Nothing further was done towards making any formal agreement between the Companies; both parties were much engaged in opposing rival schemes of railway in Parliament, and the matter remained where it was left by the foregoing application, and the resolutions of the Great Western Company passed thereon; but on the 11th August following, in consequence of some remarks of shareholders, the matter came before the Directors of the Oxford, Wor-

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cester, and Wolverhampton Company, and the following minute was entered in their proceedings:—

“ 11th August, 1846.—The position of the Company with reference to the guarantee engaged to be given by the Great Western Railway Company having been taken into consideration,

“ Resolved—

“ That this Board deem it most advantageous to the interests of this Company that the arrangement should be allowed to remain in its present state, and that no more defined settlement should at this time be pressed for.”

In the same month Lord Redesdale, who had become a shareholder in the Oxford, Worcester, and Wolverhampton Company, attended the general meeting of the shareholders in Worcester, and made an attack upon the policy of the Directors of that Company, with reference to their engagements with the Great Western Company, and also to the Birmingham and Oxford Junction Railway, at that time prosecuted in Parliament by the Great Western Company, and supported by the Oxford, Worcester, and Wolverhampton Company; and subsequently the following correspondence ensued between his Lordship and the Chairman of the Oxford, Worcester, and Wolverhampton Company.

Lord REDESDALE to Mr. RUFFORD.

SIR,

Batsford Park, September 27, 1846.

I AM much obliged to you for your letter. I assure you that my sole object will be to accommodate the Company in every reasonable demand, and to promote the interests of the concern.

If it is not an improper request to make of you, I should like to know positively when the Company are likely to require my land, and to commence their works hereabouts. I know that Directors have their secrets, and therefore it is very possibly out of your power to answer me. If, therefore, the question is undecided, or not to be announced, pray tell me so, and I shall be satisfied. If, however, you are certain either that the matter will be deferred or immediate, I hope you will feel yourself authorized to tell me, as where the transaction is so considerable, it is of some importance to know when it is likely to come on.

I hear still reports of the probable abandonment of a considerable portion of the line. As you have gone so far, I do not feel inclined to believe this, though I should be glad to hear it, as you are well aware. If you are disposed to authorize me to contradict such a report, I shall be willing to assist you by so doing, for it cannot advance the interests of the Company to have false reports spread. If any such intention is entertained, I shall be happy to assist the Directors in promoting their object.

If the line is persevered in, I do strongly recommend you to have one of the contracts between this place and Oxford let immediately. The one from the junction with the Great Western to Charlbury would pay a trifle as soon as complete, and has some stiffish work upon it. I am confident that for your future traffic it is most important that the broad-gauge communication should be opened throughout from the first, or the traffic will settle into other channels, and the line through these parts become nearly useless.

I have heard since I was at Worcester that, in fact, your hands as Directors are completely tied; that the concern is let on a 999 years' lease to the Great Western, under engagements which leave you no independence and no choice but to obey. If this be so, and I had known it, you may be well assured that I should not have troubled you with what I said at the meeting, for having no pecuniary interest in the concern, I exerted myself for what I believed to be the interest of others who I pity and thought I might assist. If the case was a hopeless one, the less said about it the better for the contentment of my poor neighbours, who have bought shares at a premium. If the case can be amended, depend upon it my speech must, if properly acted upon, strengthen your position and enable you to get better terms.

I have alluded to this subject in order that you may fully understand my motives in all my proceedings in respect to the Company.

I have, &c.,

REDESDALE.

I may add that any communication you may make shall be considered by me as strictly confidential, if you desire it to be so.

MY LORD,

Bellbroughton, September 29, 1846.

I WILL reply to your letter in the course of next week, when I hope I shall be enabled to answer several of your questions, and which I cannot do at present, because I am ignorant of the intended proceedings of the engineers.

I have, &c.,

The Lord Redesdale.

F. RUFFORD.

MY LORD,

Bellbroughton, October 7, 1846.

I HAVE postponed my reply to your letter of the 27th September, in order that I might first see Mr. Brunel, which I have done, and I now hope I am in a position to answer your questions. Mr. Elgie tells me that he had an interview with your Lordship on Monday, and

that you have approved an agreement he submitted to you on behalf of our Company. He mentioned the kind manner in which your Lordship received him, and stated to the Board of Directors that your demands were very reasonable, and you appeared desirous to afford us every accommodation.

I am authorized to state to you that your property plans will be delivered to you in about one month from this time, that we shall then be ready to treat with you for the purchase of your lands which we shall require; that we shall commence the works in your neighbourhood as soon as we can arrange some accommodation which we have been requested to afford. Although I cannot mention the particular week when we may commence the works, I believe I may assure you that it will be within this present year 1846.

I am perfectly well aware of the numerous reports which are circulated by interested parties for the purpose of injuring us in the public estimation, and depreciating the value of our property. Indeed, "it cannot advance the interests of this Company to have false reports spread," but how can we prevent the evil? I assure you we do not purpose to abandon any portion of the line. I can, however, fully enter into your feelings of dislike to a project which is so contrary to your wishes. Perhaps I ought to have stated that we have reason to believe the contracts will be let for the entire line by Christmas.

There is one part of your letter which, I confess, I read with considerable surprise, I mean that you were ignorant of the fact of this Company being under an agreement with the Great Western Company to lease the line to that Company for 999 years until since you attended our meeting at Worcester.

This lease was the foundation of our Company. It was prominently put forth in the prospectus, was set out in the subsequent contract. Upon the faith of it we obtained our subscribers. We attempted, in the first instance, to obtain subscribers, but failed until we put out the guarantee from and the lease to the Great Western Company.

We have shareholders who have urged the Directors to endeavour to repudiate this agreement, but if I know your Lordship, I am sure you would say to us "Honestly perform your engagements even if they are injurious to you;" so long as we continue to be Directors, I trust we shall faithfully perform all our promises.

I think the arrangement in every way a desirable one. I don't expect you will agree with me. I will only add to this long letter my belief that those parties who have purchased shares in this Company as an investment will have no cause of disappointment when the line is completed. Our shares are now gradually depressed, in some degree the consequence of the reports which are so industriously spread by our opponents, but principally caused by the undue speculation which existed, a large number being first sold for the account by parties who had to purchase at a high rate before they could deliver the shares (not having any when they sold), and their being held by speculators and not by *bonâ fide* holders at the time when the call of 10*l.* was made.

I have, &c.,

F. RUFFORD.

The Lord Redesdale.

SIR,

Batsford Park, October 8, 1846.

I AM very much obliged to you for your letter. In a very short time after I receive the property plans I shall be prepared to treat with the person appointed by the Company for the sale of my land, and shall be desirous in all the arrangements to facilitate your operations to the utmost of my power. I am convinced that no proceeding will give so much stability to the concern, or tend so much to improve the value of our shares, as an active commencement of the works throughout the whole line, and this step will also put us in a better position for securing to ourselves such advantages as Parliament may be inclined to grant to the broad-gauge next Session. I do consider it of vital importance that all the contracts to Oxford should be taken before the close of the year.

Perhaps I am to blame for not having inquired more strictly into the arrangements made by the Company, but I certainly was not aware that the guarantee of the Great Western was contingent upon receiving a perpetual lease of the whole line, and I confess that under such a contract I do not see what power is left to you as Directors. If you have any independent action, I think you have a very good game to play (I do not mean by putting yourselves into communication with any rival company), for I consider that you are bound in honour to the Great Western, particularly since I know the engagements made before the Act was obtained; but by putting forward your own claims for the Birmingham broad-gauge traffic as against the Rugby line, if such a favour is to be granted to any, or by agreeing with the Great Western that the concern should be transferred to the London and Birmingham on terms mutually beneficial to ourselves and to the Great Western, I believe both schemes are practicable if you have any independence left, and that from either great advantage might be reaped.

I am a strong advocate for uniformity of gauge throughout the kingdom, and therefore cannot promise any support to a demand for permission to extend the broad gauge contrary to the principle laid down by the Act of last Session; but if any such application is to be made to Parliament, our claim to be heard and our position is so much stronger than that of the Great Western for its Rugby line, that I do not see how we could fail to succeed if our cause was actively and sincerely pressed, and this I think I could prove to you if the matter was worth discussing, which it certainly is not, unless you are free to oppose the laying down of the broad gauge to Fenny Compton.

I have to apologise for troubling you with a very long letter, but though I have no pecuniary interest in the line beyond my five shares, and though I detest its coming through this

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country, I am most anxious, as it is to come, that it should be a prosperous concern; and having given much attention to the subject, am confident that my views are correct and worthy of your consideration.

I again repeat, as I think it most urgent, have all the works on your line between Oxford and Worcester in hand before Parliament meets, and you will be ready to play for the broad-gauge stake, and perhaps find the Great Western, after all, obliged to take up your cards as being better than their own, and affording the only chance of a winning game.

I have, &c.,

F. Rufford, Esq.

REDESDALE.

Why do you not make a call? money is easier got now than it will be later.

Will you be kind enough to answer the following questions; I put them on a separate paper, to save you trouble, as you can write "No," or "Yes," to each, and return it to me.

Does the guarantee of 4 per cent. extend over a sum sufficient to cover all the following items?—

The whole preliminary expenses, amounting to 74,769*l.* 2*s.* 6*d.*?—Yes.

The sums to be taken from the capital to pay 4 per cent. interest on deposits before the line is opened?—Yes.

All salaries, offices, and other incidental charges during the same period?—Yes.

In short, does it extend over all moneys raised either by shares, or borrowing, up to the time of the opening of the line throughout, or only to the actual cost of construction?—Yes, all these being part of construction.

Does it extend to the similar charges in respect of the branches for which we have obtained, or are seeking to obtain Acts?—Yes.

Is the rent to be paid for the Stratford and Moreton Railway to be considered as any other money given for property, or for compensation for damage, &c., and, consequently, to be included in the cost of construction, and paid by the Great Western; and, if not, is it to be paid out of the 4 per cent. guarantee, or to be considered as part of the cost of working the line, or in what manner is it to be brought to account?—No; but considered as one of the expenses of working the line; all tolls arising from the tramway to be considered as profit.

MY LORD,

Bellbroughton, October 9, 1846.

I HAVE to thank you for your letter of yesterday; I am not in a position to reply to your remarks at the present time; I confess, however, that I am unable to comprehend the force of your arguments regarding the policy of the broad-gauge interest.

I remain, &c.,

The Lord Redesdale.

F. RUFFORD.

SIR,

Batsford Park, October 11, 1846.

You say that you are unable to comprehend the force of my arguments regarding the policy of the broad-gauge interest.

I spoke as one concerned in the Oxford, Worcester, and Wolverhampton; your expression is more like one coming from a Director of the Great Western than from the chairman of the former line. The broad-gauge interest certainly is uniform and identical with that of the Great Western, because the direct London traffic of all broad-gauges lines must pass either entirely, or for above 60 miles along the Great Western; but it is not so with its branches, and an Eastern Counties Director might as well talk of the policy of the narrow gauge making his interest identical with that of the London and York, as a Director of the Oxford, Worcester, and Wolverhampton, of the policy of the broad gauge making his interest identical with that of the Oxford and Rugby, in connexion with the Birmingham and Oxford; so far from it, they are hostile to each other, and must ever be so.

I hold our position to be this, and I beg to be corrected if I am wrong, we are under a 999 years' lease to the Great Western, but we have reserved to ourselves a beneficial interest in our property, and it is, consequently, open to us, and it is our duty, as managing for the other proprietors, to prevent our lessees from destroying that beneficial interest which we reserved, and for their own profit depriving us of that harvest which they promised to us when we joined them.

They promised us the London traffic on the broad gauge from Wolverhampton, Dudley, and the iron districts. They now seek to take this from us. The sole recompense is an increase of the guarantee from 3½ to 4 per cent. Suppose the outlay to be two millions and a half, one-half per cent. interest on that sum is 12,500*l.* To one-half of that we should be entitled, under our original agreement, and we are now entitled to the whole of it before the Great Western can claim a share of the profits of the concern. Is it to be held that for that small sum, 6,250*l.* per annum, the Oxford, Worcester, and Wolverhampton Company, or their directors have sold the whole of the broad-gauge traffic to London from the iron districts? It would be an insult to common sense to suppose so for a moment.

I say then, that we have rights to maintain, and that to maintain them we must oppose the grant of a broad-gauge line to Fenny Compton. It is absurd to urge as an argument against such a course, that we, too, should obtain a broad-gauge line by Stratford to Birmingham. If the other is obtained, I do not believe that ours would be made, for it would have nothing to carry. The Great Western holds us, and works our line. They have to pay us 4 per cent. first, and

half the profits beyond that sum. They have the whole of the profits on the Oxford and Rugby. Their interest, as connected with the Birmingham and Oxford is the same by either route. Can any one but an idiot imagine it to be possible that under these circumstances they will not endeavour to direct the whole traffic to the Oxford and Rugby line, and not to ours? That they would do so, even if it was five miles the longest instead of the shortest; and (as they have the working of both) that they can do so in spite of any efforts you might make to prevent them.

The Oxford, Worcester, and Wolverhampton, therefore, must not talk about the policy of the broad-gauge interest generally. They must look only to the policy of the Oxford, Worcester, and Wolverhampton; any amalgamation with the Great Western at this moment would be most improvident. Our shares are too low, their rate of interest too high. Five years hence the relative position of the two concerns may be very different from what it now is. Indeed, should the competition threatened to the Great Western be successful, by a line on the south to Exeter, and on the north to Cheltenham and South Wales, I am not sure that 4 per cent. may be at no very distant day a very comfortable thing for us to have secured. I recommend that we keep what we have got, and not allow ourselves to be bamboozled or trampled upon. *We have* got the broad-gauge traffic to Wolverhampton, &c. We are fools if we let it go. We have a right to share this with the Great Western. We can, I believe, secure it, and it is no robbery of them to prevent their having it all to themselves; we only hold them to their bargain with us.

I believe our position is so strong as to ensure success, if we choose to avail ourselves of it, and if you hold that we may, I will point it out to you, for I hardly think you see it in all its bearings.

I write this to you as chairman, and request that my letter may be laid before the Board.

I have, &c.,

F. Rufford, Esq.

REDESDALE.

MY LORD,

Bellbroughton, October 13, 1846.

I WILL submit your letter of the 18th to my Board of Directors, as you desire, at their meeting which will be on Tuesday next.

I remain, &c.,

The Lord Redesdale.

F. RUFFORD.

MY LORD,

October 22, 1846.

I SUBMITTED your letter to my Board on Tuesday, and they requested me to reply to it, and to answer your questions.

I am just now very much occupied, and I must beg that your Lordship will allow me a few days longer before I reply.

I remain, &c.,

The Lord Redesdale.

F. RUFFORD.

MY LORD,

Bellbroughton, October 26, 1846.

I UNDERTAKE the task which my Board has imposed upon me with considerable reluctance. I remember well the determined opposition which you gave to this railway, and I cannot, therefore, doubt that you do, as you remark, detest its being brought through your neighbourhood. I am aware, also, that you view the construction of the Birmingham and Oxford Railway with similar distaste; I have, consequently, to urge a question of policy with your Lordship, naturally prejudiced against the interest which I advocate, although probably unaware of the influence of those feelings. I shall, however, proceed candidly to answer your observations and questions, notwithstanding the position of embarrassment in which I am placed, and state my views and the facts as briefly as the subject will permit. Referring to your letter of the 8th instant, the gist of your Lordship's argument appears to be that it is the interest of this Company that the broad gauge should be prohibited on the Birmingham and Oxford Railway as between a point on the line at the convergence of the Stratford Branch to Fenny Compton, and that we ought to put forward our claim to the Birmingham broad-gauge traffic as against the Rugby line. You say you think this a very good game to play, but you admit that you "cannot promise any support to a demand for permission to extend the broad-gauge contrary to the principle laid down by the Act of last Session."

The force of your Lordship's arguments regarding this policy I could not comprehend, nor does the most grave consideration of your letter of the 11th instant assist me in so doing. I agree with your Lordship, that it is the duty of the Directors of this Company to take care that by no act of theirs they deprive the proprietary of any of the advantages promised them. The traffic from Wolverhampton to London never was promised, and never was contemplated to pass through Worcester, and it was not included in our traffic estimates. When, in 1845, we procured the assistance of the Grand Junction Company in our Parliamentary proceedings, it was upon the distinct understanding that we were to aid them in obtaining as direct a line as practicable from Birmingham to join the Great Western Company, so as to render the northern traffic to London independent of the London and Birmingham Company. As regards the construction of the Birmingham and Oxford line, therefore, it cannot be alleged that the Great Western Company are depriving us of any harvest which they promised us. It is far

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more likely, too, that had the London and Birmingham Company secured the second line from Wolverhampton through Birmingham and Warwick into their own hands, every effort would have been made to deprive the Oxford, Worcester, and Wolverhampton line of all traffic arising from any collateral source than while such line is in the hands of the Great Western Company.

The increase in the guarantee was granted to us upon perfectly distinct grounds from those assumed, nor are you correct in the figures when stating the amount of the increase. The first arrangement was $3\frac{1}{2}$ per cent. on an estimated capital of 1,000,000*l.*, or 35,000*l.* per annum. Our line was then proposed to join the Oxford and Rugby at Banbury, but we could not obtain subscribers to that scheme. An amended guarantee was then obtained, and the line altered as we carried it. This was $3\frac{1}{2}$ per cent. on 1,500,000*l.*, or 52,000*l.* per annum. The guarantee now existing I believe you do not over-estimate, 4 per cent. on 2,500,000*l.*, or 100,000*l.* per annum, and this extended guarantee was not given until the Great Western Company had first fully satisfied themselves upon the extent of the traffic.

We are not justified, therefore, in opposing the grant of a broad-gauge line from Birmingham to Fenny Compton, even if it were our policy so to do. I contend that our policy is to support the extension of the broad-gauge on lines diverging from our own, and moreover that we shall obtain a larger amount of traffic than we shall lose by the formation of the Birmingham and Oxford line, particularly when we consider that we should have had the Worcester and Weedon, and other opposing lines, had not the Birmingham and Oxford passed.

I have now much pleasure in returning to you your paper of questions answered mostly in the affirmative, and I do believe that if you could only view these matters dispassionately, you would admit that nothing can be more satisfactory than our position with the Great Western Company, and that the conduct they have evinced towards us has been honourable and generous from the commencement.

I have, &c.,

F. RUFFORD.

The Lord Redesdale.

SIR,

Batsford Park, October 30, 1846.

I AM much obliged to you for your letter. There can be no use in continuing to discuss a question on which both parties have deliberately formed such very different conclusions, and I am sure therefore that you will agree with me in thinking that it will be better that our correspondence upon it should now terminate, although you have failed to convince me, and perhaps on some points yourself also, that my views are incorrect.

I hope that the Moreton contract will not be delayed longer than you anticipated when you wrote before, and that I may consequently expect my property plans immediately.

As a portion of the ground required for the alteration of the turnpike-road at Moreton, as agreed upon, cannot be obtained except by proceedings of the turnpike trustees, I think that it would be desirable that we should hold a meeting to give the requisite notice immediately, if you expect to commence operations then by the end of the year, and wish to know whether you are anxious that we should do so.

I have, &c.,

REDESDALE.

F. Rufford, Esq.

The foregoing correspondence took place, not only with the knowledge and assent of the Great Western Company, but the principal letter, with the reply to Lord Redesdale's queries, was expressly altered, amended, and approved by Mr. Saunders, the Secretary of that Company, previous to its transmission to Lord Redesdale; and the whole correspondence was afterwards sent by the Secretary of the Oxford, Worcester, and Wolverhampton Company, to the Great Western Company, and the latter in acknowledging it thanked Mr. Rufford for the manner in which he had treated the subject.

Nothing further occurred with reference to the agreement between the two Companies for some time. Railway property in the meantime became greatly depressed, and the means of obtaining additional capital to complete the line more and more difficult. With the view of placing the Company in a better condition to do so, the Oxford, Worcester, and Wolverhampton Company, on the 10th August, 1847, appointed a deputation of their Board to the Directors of the Great Western Company, for the purpose of requesting them to advance the interest or rent payable under their guarantee from 4 to 5 per cent.; but the Great Western Company declined to accede to the proposal.

In the month of July, 1848, the Oxford, Worcester, and Wolverhampton Railway Company, having called up all their capital under the Act of 1845, except 5*l.* per share, and finding that unless some means were adopted to raise additional capital the works must come to a stand, appointed another deputation to confer with the Great Western Company thereon, and an interview took place between deputations from each Company on the 18th of August following. No means were devised as likely to produce the necessary capital; but Mr. Russell, the Chairman of the Great Western Company, suggested that it would be expedient to confine the expenditure to the portion of the line between Oxford and Worcester, and the Great Western Deputation promised to consult Mr. Brunel upon the point, and afterwards further consider the subject.

Mr. Brunel, as is well known, was the engineer of the Great Western Company at the time the Provisional Committee of this Company made their first application to them for assistance,

and, as a matter of course, became the engineer of the Oxford, Worcester, and Wolverhampton Company; the principal solicitor, also, for this Company, was solicitor of the Great Western Company, and in other respects the interests of the two Companies had, to a great extent, been treated and considered as identical up to this time. In consequence of the foregoing communication, the following letter was received by the Chairman of the Oxford, Worcester, and Wolverhampton Company, from Mr. Brunel:—

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MY DEAR SIR,

September 8, 1848.

I HAVE had some conversation with the Directors of the Great Western Railway, who I believe were deputed to confer with you as to the proceeding with works on the Oxford, Worcester, and Wolverhampton Railway, and they appear to concur in the view which I understand to be entertained also by your Directors, of the necessity of devoting the available funds of the Company to the earlier completion of some portion which can be rendered profitable. I have felt compelled to urge this very frequently, and I am still without instructions, and consequently no arrangements are yet made to diminish the expenditure upon any one portion of the line. I fear very much that unless some steps be immediately taken we shall get into very great difficulties, unless, indeed, what I cannot conceive to be possible, the Company is likely to have an abundant supply of money to enable me to proceed with the whole line vigorously; but if, as I apprehend, there will be great difficulty in getting even a limited amount, we must devote this to the completion of some part that can be rendered profitable, and positively stop all expenditure on the rest. Now, although a great deal may be said in favour of several different portions of the line, yet you will find that the only one which under existing circumstances could be worked by the Great Western Railway with any profit to pay rent to the Oxford, Worcester, and Wolverhampton proprietors, will be from Oxford to Worcester; and that by no other means can you get a return worth considering, or which would repay the loss sustained by postponing the completion of the Oxford end.

Let me beg of you to give me some authority to act, and to prevent the further waste of money upon such portion as you think we had better postpone; my conviction is, that you have no alternative but to suspend all expense beyond Stourbridge, and devote every sixpence you can raise to the south end of the line.

I have, &c.,

F. Rufford, Esq.

I. K. BRUNEL.

To which the Chairman replied by the following letter:—

MY DEAR SIR,

Worcester, September 9, 1848.

I HAVE received your letter of yesterday's date. I am quite sure that my Board will be ready to concur in the conclusion to which you state that you have come to with the Great Western Directors, that it is advisable to proceed with the works at the Oxford end of the line, and to adopt such arrangements as you may recommend for relaxing, or for the present postponing, those north of Stourbridge.

Our Board has, as you are aware, from the first acted entirely under your advice, as to the letting of contracts and progress of the works, and I now undertake to confirm on their part such measures in this respect as you may think advisable, and as may receive the sanction of the Chairman of the Great Western Board, because, at the meeting which took place at Paddington on the 18th ultimo, between the deputations from the two Boards, to consider the position of the Oxford, Worcester, and Wolverhampton Company, and the best means of raising further capital, it was arranged that Mr. Russell and Mr. Mills should consult with you as to the portion of the line on which it would be most advisable to concentrate our available funds.

I have, &c.,

I. K. Brunel, Esq.

F. RUFFORD.

Both these letters were brought before the Oxford, Worcester, and Wolverhampton Board, who, in consequence, passed a resolution—That, in the opinion of the Board, it was desirable to prosecute the works between Worcester and Oxford in preference to those on that part of the line lying north of Worcester.

In the mean time a correspondence had arisen, in consequence of the Chairman of the Oxford, Worcester, and Wolverhampton Company having, at the General half-yearly meeting of the Company in August, 1848, in answer to questions from shareholders present, asserted that the guarantee of the Great Western Company was intended to cover the whole cost of the line, whilst the accounts published by the Great Western Company limited their liability to 4 per cent. upon a capital of two millions and a half only.

The answer of the Chairman was founded upon the idea always entertained and expressed (and no doubt fully intended by both parties down to the time the Directors of the Great Western Company, under pressure from their shareholders and the public, thought fit to publish their accounts, and therein to restrict their liabilities within the narrowest possible limit), that the guarantee of the Great Western Company was to extend over the whole cost of the line, including interest upon capital and other expenses as cost of construction.

The application of November, 1845, and the mode in which it met, was conformable to that view: it was not reasonable to expect the Great Western Company to give authority for an

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unlimited expenditure over which they had no control, but why was it limited to 2,500,000*l.*? because Mr. Brunel had estimated that sum as sufficient to cover the whole cost of the line, and it is reasonable to suppose that had he named a larger sum it would have been agreed to.

The correspondence with Lord Redesdale confirms this view of the case, and the answers to his queries show distinctly that the guarantee was intended to cover the whole cost of the line.

The Oxford, Worcester, and Wolverhampton Company had, upon the faith of this understanding, in the years 1846 and 1847, given the Great Western Company the benefit of their support and assistance as an independent Company, in promoting lines of railway in the Great Western or broad-gauge interest, and in opposing rival projects, to a much greater extent than would have been consistent with any other view of their position, and incurred therein much greater expenses and liabilities than they would have been justified in doing upon the question merely, of how the half-profits beyond the guarantee of the Great Western Company would be affected by the carrying of these further Railway Bills one way or the other.

In this state of affairs the deputations from each Company met again on the 29th of September, when the Great Western Directors denied their having ever having engaged or intended to guarantee interest on a larger outlay for the cost of the line than 2,500,000*l.*; they admitted, however, that the cost of applications to Parliament for new Branches and Extensions, and of opposing the rival schemes of other Companies, was not to be included in that sum, but was to be separately provided for, in accordance with the Minutes of the Great Western of the 10th February, 1846, which were produced and read by the secretary to the meeting.

The Directors of the Great Western Company expressed their willingness to recommend to their Board, that a fair proportionate rent should be given for such portions of the Oxford, Worcester, and Wolverhampton Railway having an unbroken connexion with the Great Western Railway as should from time to time be opened for traffic.

Upon a report of the foregoing interview being presented to the Directors of the Oxford, Worcester, and Wolverhampton Company with the Minutes of the Great Western Directors of the 10th February, 1846, which had then been received at a Board meeting on the 3rd October, 1848, they came to the following resolutions:—

“That the local Directors on this Board feel bound to declare that, although aware that the Directors of the Great Western Railway Company had, by resolutions, limited the guarantee of that Company to an amount then estimated to be sufficient, they, the local Directors, have, in their intercourse with the Great Western Railway Company and in all their proceedings, acted under the conviction, that the guarantee was intended to extend over such a sum as should be found necessary for the completion of the railway and works, including interest and expenses.

“That, under this impression, they have at the general meetings of the Company, in the presence of Directors of the Great Western Railway Company, made repeated declarations and statements in reply to the inquiries of shareholders, that the guarantee would extend to the whole cost of the line, and insure the payment of 4 per cent. interest to the original shareholders, and that no remonstrance nor observation to the contrary has at any time until the last month been made, either by the Directors present or by any other person on the part of the Great Western Company.

“That, acting, under the same impression, they had entered into various expensive Parliamentary contests, at the suggestion or with the concurrence of the Great Western Company, which they would not have been justified in doing, and would not have consented to undertake except under the belief that the guarantee was intended to cover the cost of the railway and of such Parliamentary contests.”

These resolutions were transmitted to the Great Western Company, and the following extract of minutes from the Board meeting of the 19th October, 1848, were received in reply:—

“The Chairman laid before the meeting the resolutions of the local Directors of the Oxford, Worcester, and Wolverhampton Railway Company, dated the 3rd instant, together with a letter from Mr. Rufford to him, dated the 8th instant, on the subject of the guaranteed rent payable by this Company for the lease of that line.

“At the request of Mr. Barlow, and in consequence of Mr. Rufford having relied, in corroboration of the views expressed in the said resolution upon some correspondence in the year 1846, between Lord Redesdale and himself, relating to the Birmingham and Oxford Railway, which had been shown at the time to the secretary of this Company, copies of the several letters (since furnished by Mr. Noel Smith), with a paper of queries sent back to Lord Redesdale on the 26th October, 1846, with answers approved by Mr. Saunders, were again read to this Board and carefully reconsidered.

“The whole subject was discussed. The minutes of the Board of the 10th February, 1846, and of the general meeting of proprietors, held on the 12th February, 1846, were referred to, and the circumstances of the several arrangements made with that Company were examined.

The Chairman stated that he had acquainted the deputation of the Oxford, Worcester, and Wolverhampton Company, on the day after the last half-yearly meeting of this Company, that, in consequence of some doubts which had been supposed to exist on the subject, he had been again asked at that meeting whether the guarantee was limited or not in its amount, and that he had replied to the question by a re-assurance to his proprietors, that it was limited to a rent of 4 per cent. per annum on a sum not exceeding 2,500,000*l.*, besides half the profits of the line itself.

“The chairman added, that he purposely made this communication, in order to prevent any reasonable doubt in the minds of those gentlemen forming the deputation as to his construction of the agreement between the two Companies; and that he made a written minute of the cir-

circumstance at the time, which was some days anterior to the last meeting of the Oxford, Worcester, and Wolverhampton Company.

"The more recent correspondence between the Chairman of the Oxford, Worcester, and Wolverhampton Company and Mr. Mortimer of the Stock Exchange, in relation to the affairs of that Company, was read, and the admission of the former in his letter on the 16th September, to the fact of the guarantee having been on a limited amount of expenditure, appears in the following paragraph of it, viz. :—

"The Directors of the Great Western Company could not have been expected to grant to us a guarantee upon an unlimited expenditure over which they had no direct control, and we are not at the present time in a position to submit to them a proposal for an extended guarantee, as we have no facts before us on which to ground such an application, &c."

It was resolved—

"That this Board, having been required by the resolutions of the Local Directors of the Oxford, Worcester, and Wolverhampton Company, to express officially an opinion as to the subsisting relations between the two Companies, on the subject of the guaranteed rent, affirms distinctly that the Directors of this Company have uniformly and unequivocally refused to give to the Oxford, Worcester, and Wolverhampton Company any guarantee upon an unlimited expenditure; a proposal which, in each instance of the negotiations, had been suggested to them by the deputations whom they met to confer with, and the specific reasons for refusing which had been assigned by the Directors of this Company.

"That they also declined, in the years 1845-46, to entertain any application for an increase of the original limit, until both companies should have ascertained from revised estimates what sum ought to be agreed upon as the maximum cost of the whole undertaking, embracing the alterations and additions to the works, &c., which had then been accurately ascertained, after the Act had passed, which steps would have been quite unnecessary if the guarantee was to extend over any sum which might be expended by that Company.

"That the Minutes of the Board of 10th February, 1846, communicated to the Oxford, Worcester, and Wolverhampton Company, accurately records the terms which had been discussed and agreed to, and that no subsequent negotiations with, or application to this Company has taken place, nor has any consent been given to vary or rescind these conditions.

"That in the opinion of this Board the personal attendance of any individual Great Western Director at a general meeting of the Oxford, Worcester, and Wolverhampton Company, cannot be assumed with fairness to recognize an alteration of terms and conditions previously agreed upon between the two Companies, merely because he may happen to hear from the Chairman or any other Director, their statement or opinions on a subject at variance with his own, without controverting or contradicting them.

"That this Board learning, however, with satisfaction that Mr. Rufford has recently stated that he had never represented at any meeting that the guarantee was unlimited, considers that fact to be the best refutation of the charge on any Great Western Directors, that such alleged representations by the Chairman, while presiding at a meeting of his own Company, were left unnoticed by them, and this Board considers it at least unusual, if not unjustifiable, for an individual Director to offer any direct contradiction to, or confirmation of, statements or opinions so communicated to a general meeting of proprietors, unless he shall be distinctly appealed to at the time.

"That a careful perusal of the correspondence with Lord Redesdale, and of the list of questions and answers already referred to, convinces this Board that the guarantee was understood by all parties to be limited in its amount, instead of unlimited, and that nothing appears in these documents inconsistent with the subsisting agreement between the Companies, upon which the Great Western Railway Company rely :—

"That this Board cannot, however, in discussing these incidental points which have been raised, admit the principle which seems to be contended for by local Directors of the Oxford, Worcester, and Wolverhampton Company, that the acquiescence of any Board in the alteration of a material condition of an agreement, distinctly rejected by themselves during negotiation, is to be subsequently inferred from the silence of any individual Director or officer of such company—a principle which would be fraught with mischief and injustice to all parties interested.

"Lastly—That this Board deems it essential under all the circumstances of the case, in order to preserve friendly and honourable relations with the Oxford, Worcester, and Wolverhampton Company, that the question which has been thus raised should be now finally determined, viz., whether the guarantee of this Company is or not fixed at a definite and limited expenditure, not exceeding 2,500,000*l.* for the whole railway and works sanctioned by the Act 8 and 9 Vict. 184, which guarantee is to entitle this Company to a perpetual lease of the said railway, half of the profits of such line being paid in addition to the guaranteed rent.

"Read Mr. Noel Smith's letter to the secretary, dated 18th instant, submitting, by order of his Board, under resolution of 17th instant, a proposal for rescinding a contract entered into with Messrs. Malins and Rawlinson for the supply of iron rails, upon conditions recommended by Mr. Brunel as their engineer."

It was resolved—

"That this Company cannot be justified in any interference upon the subject of the contract entered into by the Oxford, Worcester, and Wolverhampton Company with Messrs. Malins and Rawlinson; and they feel obliged, under existing circumstances, and with reluctance, to decline expressing any opinion upon that matter."

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With the view to adopt the suggestion of a partial opening of the line, Mr. Brunel was instructed to prepare a detailed estimate of the cost of the railway between certain points, which he did. The total estimate of the cost of the line, exclusive of the Kingswinford and Worcester branches, amounted to 3,000,000*l.*, but which sum included extra work at Wolverhampton under the Act of 1848 (Bill 2), estimated to be equivalent to the cost of those branches; the deputations of the two Companies met again on the 8th of November, when the Chairman of the Great Western Company intimated that they would not further treat, until the Oxford, Worcester, and Wolverhampton Company admitted that the guarantee was limited to 4 per cent. per annum on 2,500,000*l.*, and half surplus profits.

Some indirect attempts at negotiation between members of the two Companies took place, but no other meeting of the Directors was had, and the Directors of the Oxford, Worcester, and Wolverhampton Company feeling the difficulty of their position, and that the only probable means of raising further capital was by an arrangement with the Great Western Company to rent or lease such portion of the line as was likely to be completed, at a meeting preliminary to their half-yearly general meeting, on the 23rd February, 1849, came to the following resolution:—

“That, if the report of the Directors to the general meeting of shareholders this day be adopted, the deputation shall be authorized to recognize the minutes of the Great Western Railway Board of the 10th February, 1846, as the basis of the existing agreement between the two Companies. That the deputation be requested to confer with the Great Western Railway Company as to the details of such agreement, and particularly with a view to provide for a partial opening of the railway, at such rent and upon such terms as they shall think most advantageous to the confirmation of a special meeting of the proprietors of this Company.

After this submission to the condition annexed by the Great Western Company to any further negotiation, a meeting of the deputations from the two Companies was held at Paddington, on the 6th of March, when the Directors of the Great Western Company virtually put an end to any further idea of a division of the entire rent, by declining to accept any portion of the line which it was in the power of the Oxford, Worcester, and Wolverhampton Company to complete short of the whole railway.

The following Minutes of the Great Western Board were afterwards transmitted to the Oxford, Worcester, and Wolverhampton Company:—

“*Paddington, March 8, 1849.*

“The Chairman reported to the Board that a conference, as suggested, was held with a deputation of the Oxford, Worcester, and Wolverhampton Company at this station, on the 6th instant, at which they proposed to this Company a modification of the agreement for the lease of their line, having previously recognized by a minute of the 23rd February that the terms and conditions recorded in the Minute of the Great Western Railway Board, dated 10th February, 1846, form the basis of the existing agreement between the two Companies.

“The Directors of the Oxford, Worcester and Wolverhampton Company stated that the difficulties of their present position render it most desirable that the Great Western Company should undertake to lease that portion of the line between Oxford and Stourbridge as soon as it shall be finished, paying a fixed rent for the same, estimated at 84,000*l.* for 82 miles of railway, being in proportion to 100,000*l.* for 97½ miles, which was represented by the deputation to be the total mileage on their railway.

“The estimate now made of the expenditure for the entire completion of that portion of railway between Stourbridge and Oxford, was stated to be 2,080,000*l.*

“The Chairman reported further, that after a consultation with his colleagues who were present at that conference, he had apprised the deputation of the Oxford, Worcester, and Wolverhampton Company that, in their opinion, the Great Western Company could not be justified in undertaking to pay such affixed rent for a portion of their railway, scarcely reaching the verge of that district, from which almost exclusively the mineral and manufacturing trade of the line must be expected to come, without even a junction with any northern railway, and consequently so deprived, besides, of the means of receiving traffic from any other district.

“The Chairman stated, that he thereupon suggested to the deputation, as the only method which had occurred to the Great Western Directors of meeting their views, that it might be practicable to obtain the consent of the Great Western proprietors, to adopt an arrangement similar to that agreed with the South Wales Company, by which they are to work any portion of the line while partially opened, for the benefit and risk of owners, until the fixed rent shall become payable in respect of the whole line under the terms of the lease.

“The deputation did not consider any such plan likely to be satisfactory to the shareholders in the Oxford, Worcester, and Wolverhampton Company, and therefore requested that some definite answer might be given to their proposal. It was subsequently suggested by one member of the deputation, that if the partial opening between Oxford and Stourbridge should appear to be objectionable to the great Western Company, they might be induced to entertain the same question upon the principle of the line being finished to Dudley.

“The whole subject thus brought under discussion at the conference was very fully considered by the Board, and the relative position of the two Companies, with the probable effect of such modifications in the existing agreement on their respective interests, were carefully reviewed.”

It was resolved—

“That this Board with great regret feel compelled to decline the proposal made to them on behalf of the Oxford, Worcester, and Wolverhampton Company, as quite incompatible with

the just and equitable rights of their proprietors, being calculated materially to increase their risk while it would deprive them of the principal traffic on which this Company has always relied as the consideration for the rent they engaged to pay for the whole line.

"That the Directors will be prepared to recommend to their proprietors to work the portion of railway up to Stourbridge, if it shall suit the Oxford, Worcester, and Wolverhampton Company to finish it, handing over to them the net profits of the line, after defraying all the working and contingent expenses, and interest, and depreciation on the stock to be provided; or, if an arrangement can be made of a binding and satisfactory character with the London and North Western Railway Company, for the perpetual right of use of broad-gauge rails over the Stour Valley line between Tipton and Wolverhampton, and for the use of a joint station at the latter place upon equitable terms,—the Directors of this Company will be prepared to entertain the question of a modified lease between Tipton and Oxford, subject to fair and proper allowances, or reductions, in respect of the abandoned portion of railway, having regard, also, to the conditions upon which the substituted right over the Stour Valley line may be obtained.

That it is essential, however, under existing circumstances, in suggesting any such general outline of a proposition, to guard against the inference that the Board thereby commit themselves or the Company to the final adoption of any such plan until the terms and conditions of it shall have been fully and entirely discussed, considered, and settled, nor until the sense of their proprietors, at a special meeting, shall have been taken upon the arrangement previously recommended to them by the Board as just and equitable between the two Companies."

This appears to be only an elaborate attempt to avoid the performance of that which the deputation of the Great Western Company had stated they would recommend to the Board; viz., to pay a fair proportionate rent for such portions of the line having an unbroken connexion with the Great Western Railway as should from time to time be opened for traffic, and upon the strength of which the Directors of the Oxford, Worcester, and Wolverhampton Company passed the resolution of the 23rd February, 1849, for the part put prominently in these resolutions, being the northern end of the line, is precisely that portion which could not be worked in connexion with the Great Western Railway until the whole of the railway was made.

It is believed, from these circumstances, that the Directors of the Great Western Company have no real desire to assist the Oxford, Worcester, and Wolverhampton Company out of their present position, and seeing no prospect of any arrangement with them that will have the effect, the Directors of the Oxford, Worcester, and Wolverhampton Company, according to their promise made to the shareholders at the last general half-yearly meeting, have determined to call a special general meeting of the proprietors, and to lay before them all the circumstances connected with their engagement to the Great Western Company.

Before doing so the Directors are desirous to be advised upon the legal rights and liabilities of the Company with reference to the Great Western Company.

And, *first*, whether there is any legal existing agreement binding both Companies.

No formal agreement under the seals of the Companies has ever been executed.

The preliminary agreements of August and September, 1844, would appear not to be binding

First—Because, as the several matters which were required as conditions precedent were not performed on the part of the Oxford, Worcester, and Wolverhampton Company, without any default on their part, the Great Western Company were at liberty to repudiate the contract, and as they might have done so, it was not binding on the Oxford, Worcester, and Wolverhampton Company.

Secondly—They were made legally binding by the Act of 1845, because sec. 130 of that Act only made such agreements valid and binding as had been made by the provisional committee of that Company and the Directors of the Great Western Company, with the sanction of any general meeting of the last-mentioned Company, and no such sanction was given at any general meeting of the Company to the agreements in question before the passing of that Act; the resolution of the Great Western Company of February, 1845, being general and prospective, and having no reference to the terms and conditions of the agreements already entered into.

Thirdly—The agreement of September, 1844, not being signed by the provisional committee of the Oxford, Worcester, and Wolverhampton Company, although the terms of it had been agreed upon between them and the Directors of the Great Western Company, was not a contract or agreement made before the passing of the Act, nor did the failure of that agreement remit the parties to the agreement of 15th August, 1844, because the terms and conditions were inapplicable to the altered state of things.

The subsequent resolutions of the Great Western Company of the 10th February, 1846, and all that has taken place respecting them, cannot be said to constitute an existing agreement, for they did not get before the Board of the Oxford, Worcester, and Wolverhampton Company until October, 1848, and they are at last only recognized by the Directors of the Oxford, Worcester, and Wolverhampton Company as the basis of an agreement subject to the confirmation of a special meeting of the proprietors.

As to the agreements of 1844, neither of them received the sanction of a general meeting of the Great Western Company, and they became inapplicable, and were considered by both parties as inapplicable, to the circumstances as they existed after the Act of 1845 was obtained.

The last of those resolutions, it is submitted, contemplates an enlargement of the guarantee in the event of any works being done or capital expended for purposes not contained in the revised estimates, with the consent in writing of the chairman of the Great Western Company, although it will be seen this position is strenuously contended against

by the Great Western Company, who assert that under no circumstances was the guarantee to exceed 2,500,000*l*.

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After the Act was obtained the dealings of the two Companies with each other proceeded on a footing which was perfectly understood by the Directors of both Companies; but it was never reduced to precise and positive terms. Indeed, the resolution of the 11th August 1846 implies that the Oxford, Worcester, and Wolverhampton Company considered that it was prudent on their part to keep things as they were, and not to press for a more definite settlement.

No agreement could be binding unless entered into with the approbation of three-fifths of the shareholders of the Great Western Company personally present, or by proxy, at a meeting specially convened for that purpose. No such meeting was ever held.

Such resolutions as those of the 12th Feb. 1846, delegating special powers to the Directors, are not a compliance with the requirements of the 128th section of the Act of 1845.

There is no agreement in writing signed by or on behalf of the Directors of both Companies; there is not even a parole agreement in clear and definite terms, and of which all the material conditions were fixed. Even if the mutual understandings on which the parties acted could be treated as an agreement, these would not be applicable to existing circumstances.

Under these circumstances, my opinion is, that there is not any valid contract which the Oxford, Worcester, and Wolverhampton Company can enforce against the Great Western Company.

2nd. The canal will not be considered, under these circumstances, a substitution for the Kingswinford branch.

There not being any contract which the Oxford, Worcester, and Wolverhampton Company can enforce against the Great Western Company, the latter part of the question does not arise.

My opinion being that there is not such an agreement between the two Companies as can be enforced in equity, this question does not arise.

it be advisable to prepare and tender the draft of a formal agreement to the Great Western Company?

The Great Western Company may be compelled by the Railway Commissioners to complete the railway, under the 131st section of the Act 1845. But the Act has omitted to say what in so

a state of things will be the relative situation of the two Companies in respect of the money advanced by the Great Western Company. The Oxford, Worcester, and Wolverhampton Company could not without the approbation of the Railway Commissioners pay any interest or dividend till the whole of the railway was opened and the Great Western Company, as against the shareholders is in the situation of an incumbrance on the railway.

The Great Western Company cannot, either as guaranties of the River Severn Navigation or as expectant lessees of the railway, interfere to prevent the Directors from opening any portion of the railway for traffic.

verhampton Company from opening any portion of the railway for traffic, they declining to take the lease until the whole is completed?

They have already given their veto, but not in a manner hostile to the Oxford, Worcester, and Wolverhampton Company, against the opening of that portion of the line over which the Birmingham and Gloucester Company (now the Midland) have running powers.

The statement of the prospectus was true at the time it was made, but under the Acts of Parliament, and in conformity to their provisions, a state of circumstances has arisen to which the prospectus is not applicable. The Directors have acted within their powers and in perfect good faith. I am therefore of opinion that the original subscribers in the Oxford, Worcester, and Wolverhampton Company have not any rights which they can enforce against the Oxford, Worcester, and Wolverhampton Directors and the Great Western Company, or either of them, in respect to the language of the prospectus.

An agreement to accept a lease of the railway when completed at a rent equal to 3½ per cent. is a very different thing, it is submitted, to that here described, which must be construed to mean that the Great Western Company will see each subscriber gets 3½ per cent. upon his capital.

Counsel will therefore be pleased to advise whether there be, under the circumstances, any valid contract which the Oxford, Worcester, and Wolverhampton Company can enforce against the Great Western Company. If yes, what are the terms and conditions thereof?

During the progress in Parliament of the Act of 1845, the Directors of the Oxford, Worcester, and Wolverhampton Company in name, and the Great Western Company in fact, entered into a contract with the proprietors of the Stourbridge Extension Canal Company to purchase that canal at the sum of 49,000*l.*; powers to complete the purchase were conferred by the subsequent Act of 1846, which was afterwards done, and the money paid by the Oxford, Worcester, and Wolverhampton Company.

The canal in question takes the direction of the proposed Kingswinford branch of the railway, and it is scarcely necessary to have both means of conveyance in the same hands; the capital of the Company being insufficient for the main line, the Directors have allowed their compulsory powers for the purchase of the greater part of the land required for the Kingswinford branch to expire.

2. Will the canal be considered, under these circumstances, a substitution for the Kingswinford branch?

And can the Oxford, Worcester, and Wolverhampton Company enforce any contract with the Great Western Company, so long as that branch remains unfinished? or can they be compelled to complete it?

3. Should counsel be of opinion that, under the circumstances stated, there is such an agreement between the two Companies as can be enforced in equity, would

4. Can the Great Western Company be compelled by the Railway Commissioners (substituted for the Board of Trade) to complete the railway under the 131st section of the Act of 1845?

And if so, what will be the relative situation of the two Companies in respect to the money advanced by the Great Western Company for that purpose?

5. Can the Great Western Company, either as joint guaranties of the River Severn Navigation, or as expectant lessees of the railway, interfere to prevent the Directors of the Oxford, Worcester, and Wolverhampton Company from opening any portion of the railway for traffic, they declining to take the lease until the whole is completed?

6. Have the original subscribers in the Oxford, Worcester, and Wolverhampton Company any rights which they can enforce against the Oxford, Worcester, and Wolverhampton Directors and the Great Western Company, or either of them, in respect to the language of the prospectus, which states that a guarantee of 3½ per cent. per annum on the estimated capital, with half the surplus profits, will be secured to the shareholders?

It is true the subscribers' agreement, which every such shareholder executed, refers to and confirms the agreements of the 15th of August and the 14th of September, but the nature of those agreements is not further described, nor had the shareholders any means of ascertaining it. This prospectus, so far as the Great Western Company are concerned, is referred to and identified by the agreement of the 14th of September, 1844; and it will be remarked, that in all the correspondence and proceedings down to the time at which the nature of the agreement between the two Companies began to be questioned, and particularly in their own resolutions, it is called a guarantee, and interest, not rent. Nothing appears before the public of any agreement for a lease having been made.

I do not observe any words in any of the Oxford, Worcester, and Wolverhampton Acts which would authorize the raising of money by issuing preferential shares. The language of the Acts tends quite the other way.

7. Have the Oxford, Worcester, and Wolverhampton Company power, under the Act of 1848, to raise money by the issue of preference shares?

It would seem not, as there is no express power for that purpose; and section 3 states that the further money raised shall be considered as part of the original capital of the Company, and shall be subject to the same provisions in all respects as if it had been part of the original capital.

As before stated, the Oxford, Worcester, and Wolverhampton Company incurred large parliamentary and other expenses in opposing railway Bills in support of the Great Western interest in expectation, and upon the understanding that the expenses, or at least the greater proportion of them, would be provided for by the Great Western Company, and the Directors of the Oxford, Worcester, and Wolverhampton Company have always considered that they have a claim against the Great Western Company, in respect thereof. If these sums were carried into the cost of construction, the amount would exceed the 2,500,000*l.* which the Great Western Company insist is the extent of their guarantee; and in arguing the question of their liability beyond that sum, they pointed to the last clause of their resolution of February, 1846, as showing that these expenses were to be otherwise provided for. The expenses alluded to were incurred not only with their consent, but in fact under their direction.

It is true that no written consent of their chairman was ever given as required by the resolution, but it must be remembered that the Oxford, Worcester, and Wolverhampton Company, not having received these resolutions, were not aware that such a condition was attached; at all events the resolution contemplates something which the Great Western Company, with such written consent, would provide for; and as they now contend that it was not to be added to the guarantee, the only alternative seems to be, that it should be repaid to the Oxford, Worcester, and Wolverhampton Company; the Great Western Company, however, deny their liability.

These expenses should have been provided for by express agreement at the time. In point of morality and honour, the Great Western Company should bear a due proportion of these costs and expenses; but in the absence of such agreement, I see no ground on which the Oxford, Worcester, and Wolverhampton Company can sustain a claim against the Great Western Company for the amount of these expenses or a fair proportion thereof.

If there are any particular costs, or proportion of costs which it can be shown that the Great Western Company have contracted to pay, an action may be maintained for such costs or proportion of costs.

In reference to this part of the subject, it should be mentioned that the Great Western Company originally held 7,500 shares in the Oxford, Worcester, and Wolverhampton Company; they now hold only 3,620, having sold the difference at a profit of upwards of 30,000*l.*

I cannot suggest any legal step which would be likely to improve the position of the Oxford, Worcester, and Wolverhampton Company. The relations between them and the Great Western Company have been left in too loose and ill-defined a state to make it advisable in either party to engage in litigation. The Oxford, Worcester, and Wolverhampton Company should either form a new alliance with the Great Western, on clearly defined terms, and on a regular agreement, so that either party may enforce it against the other, or should put an end to all connexion, except what may naturally arise out of their traffic, and carry on the business of their line independently and entirely on their own account. Which of these two courses is the preferable one in reference both to the present difficulties and the ultimate advantage of the Company is a matter of prudential consideration which the Directors must determine for themselves.

8. Can the Oxford, Worcester, and Wolverhampton Company sustain a claim against the Great Western Company for the amount of these expenses, or a fair proportion thereof?

And would it be advisable to make a formal demand of the amount before the special general meeting?

Lastly, counsel is requested to advise the Directors of the Oxford, Worcester, and Wolverhampton Company generally upon their present position, and to make any observation or suggestion that occurs to him thereon, or with reference to the report to be made by them to the proposed general meeting of shareholders.

Appendix No. 75.

Oxford, Worcester,
& Wolverhampton
Railway.

Office of Commissioners of Railways, Whitehall,
October 12, 1849.

SIR,

I AM directed by the Commissioners of Railways to inform you that you are appointed to inspect the line of the Oxford, Worcester, and Wolverhampton Railway, and to report in detail (dividing the line into such sections as you may deem most convenient for conveying to

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the Commissioners an accurate idea of the facts) on the state of the several works which have been commenced, and either may or may not be completed, and on the probable amount required to complete those which are not yet completed, and those not yet commenced; and with respect to works not yet commenced, on the reasons which may appear to you to have occasioned their postponement, stating in each case whether the land has or has not been purchased, or the necessary steps for obtaining the land taken.

And you are further to report, with reference to each section of the line, on the nature and extent of the inconvenience occasioned to individuals and to the public by the works being abandoned in their present state.

I have, &c.,

Capt. Simmons, R.E.,
&c. &c.

H. D. HARNESSE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
October 12, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 2nd instant, and also of the Report of the Directors of the Oxford, Worcester, and Wolverhampton Railway Company referred to therein, and to inform you that the Report does not afford an answer to the inquiries contained in the letter of the 17th ultimo, in reply to which it has been forwarded; and that it is necessary for the Commissioners to have accurate information on the several points alluded to in those inquiries before they can decide upon the course to be adopted in consequence of the complaint which has been urged upon their attention by several memorials, of the injury inflicted on individuals and on the public, by the abandonment of the works of the Oxford, Worcester, and Wolverhampton Railway.

Under these circumstances, the Commissioners have directed Captain Simmons, one of their inspecting officers, to visit the line, and to make a detailed report to them upon the works and portions of line completed; the state of the several works which have been commenced; and the reasons which may have induced the postponement of the construction of any parts of the line which are not yet commenced; and they trust the Directors of the Company will afford this officer such information and facilities as he may require for the preparation of his Report.

The Commissioners are also anxious to receive from the Company, as early as possible, accurate information on the following points connected with the financial state of the Company, viz.:—the number of shares created under each of the Acts by which the Company has received power to raise capital; the denomination of such shares; the number issued and registered; the several calls made upon them; the amount received on each of those calls; the arrears considered due upon each call, and for which there are registered shareholders responsible; the extent to which the several powers to borrow capital have been exercised by the Company; the probable amount requisite to complete the works in progress, and the sum which will be required for those not yet commenced. They are also desirous to be informed whether, in the present state of the money market, the Company can obtain the remainder of the capital they have authority to raise; and whether it is the opinion of the Oxford, Worcester, and Wolverhampton Railway Company that the Great Western Railway Company will be able to exercise that power if called upon to complete the lines; or whether some compromise might not be entered into between the two Companies which would ensure the prompt completion of a portion of the railway.

I have, &c.,

The Secretary of the
Oxford, Worcester, and Wolverhampton Railway Company.

H. D. HARNESSE,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
October 12, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 5th instant, and to enclose, for the information of the Great Western Railway Company, a copy of a letter which has been addressed to the Oxford, Worcester, and Wolverhampton Railway Company, on the subject to which your communication relates. The Commissioners have now been called upon by several memorials to exercise the powers vested in them by the 131st section of the Oxford, Worcester, and Wolverhampton Railway Act, but they cannot determine on the course which it may be their duty to adopt until they have obtained additional information; and they have, therefore, directed the several inquiries to be made which are mentioned in the enclosed document.

I am also to inform you that the Commissioners, as they are advised, are of opinion that all the powers at present possessed by the Oxford, Worcester, and Wolverhampton Railway Company to raise capital will be transferred to the Great Western Railway Company if the latter Company be required by the Commissioners, under the Act, to complete the Oxford, Worcester, and Wolverhampton Railway.

I have, &c.,

The Secretary of the
Great Western Railway Company.

H. D. HARNESSE,
Capt. Royal Engineers.

SIR,

Worcester, October 30, 1849.

Appendix No. 75.

HAVING laid before the Board of Directors, this day, your letter dated the 12th instant, I was desired to furnish the following statistical and other information; and to add, that a deputation from the Board will be in London to-morrow night, for the purpose of waiting on the Railway Commissioners at any hour they may please to appoint on Thursday next, and of supplying any further information that may be required as to the position and affairs of the Company.

Oxford, Worcester,
& Wolverhampton
Railway.

I am to request the favour of your communicating, in the course of to-morrow, to William Mathews, Esq. (one of the Directors forming the deputation), at Osborne's Hotel, Adelphi, the hour at which it will be convenient to the Commissioners to receive the deputation.

In reply to your inquiries, I beg to state—

1. That the number of shares created is 30,000, of 50*l.* each, under authority of the Act of Incorporation (5th August, 1845).

2. Thirty thousand shares have been issued, of which 565 have been since forfeited.

3. 50*l.* per share has been called up, as under—

	£.	s.	Paid. £.	s.	Arrear. £.	s.
Deposit . . .	2	10	75,000	0		
2nd instalment . . .	10	0	287,080	0	12,920	0
3rd ditto . . .	5	0	139,995	0	10,005	0
4th ditto . . .	5	0	138,925	0	11,075	0
5th ditto . . .	5	0	138,175	0	11,825	0
6th ditto . . .	7	10	204,947	10	20,052	10
7th ditto . . .	5	0	135,385	0	14,615	0
8th ditto . . .	5	0	135,330	0	14,670	0
9th ditto . . .	5	0	131,945	0	18,055	0
	£50	0	£1,386,782	10	£113,217	10
			113,217	10		
			£1,500,000	0		

4. Amount of arrears supposed to be recoverable, about 40,000*l.*

5. Number of shareholders who are in arrear for calls, 116.

6. Amount borrowed on debentures, 142,582*l.*

7. Probable amount required to complete the works in progress, 1,227,203*l.*

8. Probable amount required to complete works not yet in progress, exclusive of parts not now intended to be made, 50,000*l.*

9. In the present state of the share market, the Company cannot raise the required capital which they are authorized to raise.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

NOEL THOMAS SMITH,
Secretary.

PROPOSITIONS made by the Oxford, Worcester, and Wolverhampton Railway Company to the Great Western Railway Company.

It being admitted on all sides, that owing to the large amount of share capital authorized to be raised by the Oxford, Worcester, and Wolverhampton Company's Act of Parliament, not being yet issued, and the impossibility of issuing this capital at the present depressed price of the shares, together with the difficulty of raising any money on debentures, the possibility of carrying out the arrangement proposed by the Great Western Company for the guarantee of 4 per cent. becomes too remote to be calculated upon for any practical purpose.

The following propositions are, therefore, submitted to the Great Western Company, for their consideration, previous to any measures being adopted by the Oxford, Worcester, and Wolverhampton Company for the amelioration of their present position.

1. The Great Western Company to assume that portion of the line from Oxford to Abbot's Wood, and finish the same on the broad-gauge, allowing the Oxford, Worcester, and Wolverhampton shareholders per cent. interest for the outlay already made on this portion of the line.

The Oxford, Worcester, and Wolverhampton Company to finish the line from Abbot's Wood to an independent station in Wolverhampton, either by the Stour Valley line from Tipton, or otherwise, on the mixed gauge.

This northern portion from Abbot's Wood to be leased to the Great Western Company at 4 per cent. on the outlay, and half profits; or,

2. The entire line being finished on the principle stated above, let it be worked in such a manner as will ensure the greatest amount of traffic, and the profits divided between the two Companies according to the outlay of each *pro rata*; or

3. The Great Western Company to take to and finish the line on the broad-gauge from Oxford to Abbot's Wood, allowing per cent. to the Oxford, Worcester, and Wolverhampton shareholders for their outlay, and the latter to finish it from Abbot's Wood to Wolverhampton on the narrow gauge (or double gauge), each party working their own portion for their own interest, with an understanding for a cordial co-operation in sending into each other's hands all the traffic possible.

Appendix No. 75.

LIST of DEBENTURES issued to 30th June, 1849.

Oxford, Worcester,
& Wolverhampton
Railway.

No.	Amount.	When issued.	No.	Amount.	When issued.	No.	Amount.	When issued.
	£.	1847.		£.	1848.		£. s. d.	1848.
1	700	August 31	47	1,000	August 1	98	1,000 0 0	Nov. 27
2	800	Sept. 8	48	1,000	" 1	99	1,000 0 0	" 27
3	420	" 8	49	500	" 1	100	1,000 0 0	" 28
4	500	" 9	51	1,000	" 9	101	1,000 0 0	" 28
5	400	" 10	52	1,000	" 9	102	1,000 0 0	" 28
6	800	" 15	53	1,000	" 9	103	1,000 0 0	" 28
7	350	" 17	54	1,000	" 9	104	1,000 0 0	" 28
8	10,000	" 17	55	1,000	" 9	105	1,000 0 0	" 28
9	2,000	October 12	56	1,000	" 22	106	1,000 0 0	" 28
10	500	" 19	57	1,000	" 22	107	1,000 0 0	" 28
11	1,000	Dec. 18	58	500	" 22	108	1,000 0 0	" 28
12	1,000	" 18	62	1,000	Sept. 8	109	1,000 0 0	" 28
13	1,200	" 22	63	1,000	" 8	110	1,000 0 0	" 28
		1848.	64	1,500	" 8	111	1,000 0 0	" 28
14	2,500	January 7	65	500	" 22	112	600 0 0	Dec. 8
15	2,500	" 7	66	1,000	" 22	113	1,000 0 0	" 8
16	2,500	" 7	67	1,000	" 22	114	1,000 0 0	" 8
17	2,500	" 7	68	1,000	" 22	115	1,400 0 0	" 27
18	3,000	" 11	69	1,000	" 22			1849.
19	2,000	" 11	70	1,000	" 22	118	1,000 0 0	January 3
20	2,000	" 11	71	1,000	" 22	119	1,000 0 0	" 3
21	1,000	" 11	72	1,000	" 26	127	1,000 0 0	February 8
22	1,000	" 11	73	1,000	" 26	128	1,000 0 0	" 8
23	500	" 19	74	1,000	" 26	129	1,000 0 0	" 17
24	1,000	" 19	75	1,500	October 4	130	1,000 0 0	" 22
25	1,000	" 19	76	500	" 9	131	1,000 0 0	" 22
26	1,000	" 27	77	1,000	" 16	132	1,000 0 0	" 22
27	500	" 27	78	1,000	" 16	133	1,000 0 0	" 22
28	500	" 27	79	1,000	" 16	134	1,000 0 0	" 22
29	500	" 27	80	1,000	" 16	135	1,000 0 0	" 22
30	500	February 1	81	1,000	" 16	136	1,000 0 0	" 24
31	500	" 1	82	1,000	" 16	137	1,000 0 0	" 24
32	500	" 1	83	500	" 18	138	1,000 0 0	" 26
33	500	" 1	84	500	Nov. 3	139	1,000 0 0	" 26
34	700	" 5	85	500	" 6	140	1,800 0 0	March 10
35	500	" 15	86	500	" 15	141	1,000 0 0	" 26
36	1,000	March 10	87	1,000	" 15	142	150 0 0	" 26
37	1,000	" 10	88	1,000	" 15	143	500 0 0	" 29
38	500	" 15	89	1,000	" 15	144	1,200 0 0	April 27
39	2,000	April 13	90	1,000	" 15	145	1,200 0 0	" 27
40	1,400	May 25	91	1,000	" 15	153	1,000 0 0	May 4
41	2,000	July 25	92	1,000	" 27	154	200 0 0	" 14
42	1,000	" 25	93	1,000	" 27	155	2,331 0 0	June 11
43	1,000	" 25	94	1,000	" 27	156	665 10 0	" 11
44	1,000	" 25	95	1,000	" 27	160	582 15 0	" 11
45	1,000	" 25	96	1,000	" 27	161	582 15 0	" 11
46	1,000	" 25	97	1,000	" 27	162	582 15 0	" 11

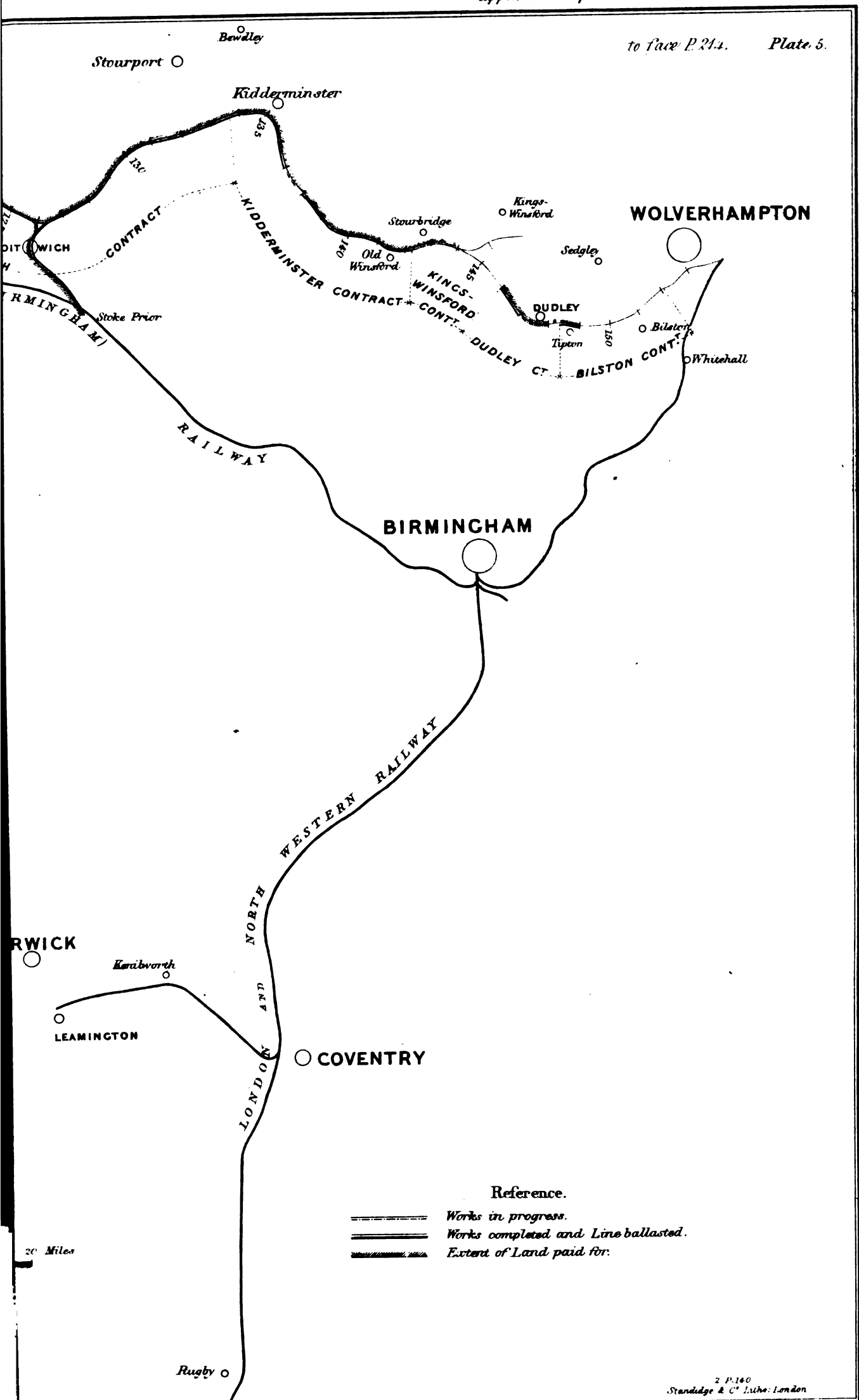
SIR,

Whitehall, November 27, 1849.

I HAVE to report to you, for the information of the Commissioners of Railways, that, in furtherance of the instructions contained in your letter of the 12th October, I lost no time in communicating with the Oxford, Worcester, and Wolverhampton Railway Company, and that I examined the line carefully along its whole length, from its commencement in the county of Oxford to the northernmost point where any works had been commenced or land purchased; and that I then examined, in the engineer's office at Worcester, the various documents, estimates, &c., bearing upon the matters concerning which I was instructed to report to the Commissioners, in which I was afforded every assistance by Mr. Varden, the resident engineer upon the line, acting under the instructions of Mr. Brunel.

I now proceed to report in detail, in compliance with the instructions of the Commissioners (dividing the line into such sections as are most convenient for conveying to them an accurate idea of the facts), on the state of the several works which have been commenced and either may or may not be completed, and on the probable amount required to complete those which are not yet completed, and those not yet commenced, and with respect to those not yet commenced, on the reasons which may appear to have occasioned their postponement, stating in each case whether the land has or has not been purchased, or the necessary steps taken for obtaining the land taken; and also to report with reference to each section of the line on the nature and extent of the inconvenience occasioned to individuals and to the public by the works being abandoned in their present state. The whole line has been divided for the purpose of letting the works to contractors for construction into sections, varying in length from $1\frac{1}{4}$ to 17 miles, the system being to let under one contract all the engineering works of every description (with the exception of the superstructures when timber is used in the bridges or viaducts), including fencing, earthworks, masonry, &c., and ballasting, ready for the laying of the permanent way, but not including station buildings or permanent way.

For facility of explanation, I shall generally adopt these same divisions for the purpose of



conveying to the Commissioners an idea of the state of the works, &c., as required by their instructions. Commencing at Oxford, 63 miles from London, there is a length of about three miles in progress, and nearly completed in readiness for the permanent way, which has been constructed by and is the property of the Oxford and Rugby Railway Company. The Oxford, Worcester, and Wolverhampton Railway Company had powers in their original Act to make this line, as had also the Oxford and Rugby Railway Company; but the former Company do not propose to exercise those powers, the line being in course of construction by the latter Company. At the point of junction, 66 miles 9 chains from Paddington, the Charlbury contract commences, and is 12 miles 4·28 chains in length; upon which the land for 332 chains in length, measured upon the centre line of the railway, has been purchased and paid for; the remainder (632 chains) has not been purchased, but a considerable portion of it has been agreed for, and the required notices have been served for the whole. On the land which has not been purchased, nothing has been done towards the construction of the railway, the surface of the ground not having been disturbed, nor the land fenced; but I remarked that the purchased lands being in detached portions over the first five miles of the line, a well-worn footpath had been made, evidently by persons moving along the line of railway, breaking down the fences in their way, on a portion about a mile in length which has not been purchased. This is in a measure accounted for by the work having been begun in three detached cuttings in land acquired by the Company, having this length of one mile between them. Where the land required for the railway has been purchased, it has generally been fenced off from the adjoining properties with a very efficient description of fence, previous to the commencement of the work; and I may here state, that, throughout the whole length of the line, I generally found that the fencing erected was of a good and efficient character, and such as ought not to be a source of complaint to adjoining proprietors. With respect to engineering works on this contract, I found that on the first five miles from 66½ to 71½ miles (the mileage throughout this Report being taken from Paddington), a small amount of earthwork has been done in three cuttings, filling in corresponding embankments; four road bridges, with their approaches, have been completed, and the traffic diverted through or over them. At one of these, leading from Woodstock to Ensbam, a temporary railway ran across the road on the level, causing a slight jolting to passing carriages; but orders have been given for its removal. Three bridges to carry the railway over the river Evenlode are partly executed, but they are not of a heavy nature. Altogether the works on this contract are of a light nature, the probable cost, including 5,200*l.* for stations and station accommodation being 132,300*l.*, of which the probable value of the work done may be taken at 16,500*l.*, or 12½ per cent. of the whole, exclusive of permanent way. The amount paid for land is 32,342*l.*, and the estimate of the sum remaining to complete the purchase of land throughout its length is 17,800*l.* No land has been bought nor fenced, nor works of any description executed, from 71½ miles to 78½ miles, which is the end of this the Charlbury contract, upon which to complete the purchase of land and execution of works, exclusive of permanent way, which will be hereafter considered, a further outlay of about 133,610*l.* will be required.

The Shipton contract commences at the termination of the Charlbury contract, at 78 miles 13·28 chains, and is 11 miles 45·54 chains in length, terminating in the parish of Evenlode, at 89 miles 58·82 chains. From its commencement for 626 chains, or up to the 86th mile, the works are completed, and the line ballasted ready for the reception of the permanent way. All the bridges and communications across the railway seem to be in the same state as that in which they will remain after the completion of the railway; and therefore, in this and other places where the works are in a similar condition, the inconvenience occasioned to the public is rather of a negative character, as they do not derive the benefits which might have been anticipated from the construction of the railway; and the only cause of complaint to the landowners appears to be from the railway affording a thoroughfare through their estates, and possibly, in some cases, rendering the preserving of game more difficult. From the 86th mile, for a space of 44 chains, notices have been served of the extent of the land required, but it has not been purchased nor fenced, and no works have been done; consequently a path has been worn in the direction of the railway, which may be an inconvenience, but during the discontinuance of the works, not of very great extent.

Hence for 185 chains the land has been purchased with the exception of about seven chains; it is all fenced, and the works completed up to the formation level, except a small stream bridge, and a three-arched bridge to carry the turnpike road from Addlestrop to Stow-on-the-Wold over the railway; this latter bridge is completed with the exception of the parapets, approaches, and the roadway itself, which, as it existed at the time of my inspection, must certainly produce great inconvenience to the public, being diverted temporarily and much restricted in width by the fences enclosing it, and by impediments caused by the execution of the works. The Company had a few men at work upon the bridge with the intention of completing it, in consequence of legal proceedings having been instituted against them by the trustees; but, unless more men be employed upon it, I fear that the public may continue to suffer this inconvenience for a considerable time longer. For the last 70 chains of this contract the land has not been purchased nor fenced, nor any works executed. Upon this, the Shipton contract, extending from 78 miles 13·28 chains to 89 miles 58·82 chains, the total estimate for works, including 3,100*l.* for stations and station accommodation, is 86,027*l.*, of which the value of work done may amount to about 76,000*l.* or 87½ per cent. of the whole exclusive of permanent way. The amount paid for land is 26,945*l.*, and the estimate of what remains to be paid is 4,304*l.*; therefore, upon this, the Shipton contract, a further outlay of about 14,331*l.* will be required to complete the purchase of land and the execution of the works, exclusive of permanent way.

The Moreton adjoins the Shipton contract, and commencing at 89 miles 58·82 chains, and terminating at 95 miles 8·42 chains, is 5 miles 29·60 chains in length. The land throughout

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has been purchased and fenced, with the exception of about 16 chains in length near the 91st mile, and 70 chains at the northern end. The earthworks upon this contract, which are heavier than the average, are far advanced towards completion, and many of the bridges for roads are completed; one occupation-road bridge at 90½ miles is incomplete, but the level of the ground not having been disturbed, its state cannot be productive of inconvenience to the landowner.

Close adjoining the town of Moreton-in-the-Marsh, which is at 91½ miles from London, the railway is nearly on the surface of the ground; two public highways (the turnpike-road from Moreton to Chipping Norton, and the Foss Way turnpike-road from Moreton to Shipston-on-Stour) have to be carried over the railway by bridges with long approaches, one of which again interferes with the parish road from Moreton to Batsford. These approaches are now in a most incomplete state, and must be productive of very great inconvenience to the public. On the turnpike-road to Chipping Norton, the bridge approaches are only raised to half their proper width, and are in such a state as almost to come under the description of being dangerous to the traffic upon the road. The approach to the other bridge being incomplete, compels all vehicles passing out from Moreton towards Batsford by the public road to make a considerable detour over very inconvenient and rough places, and both may, I think, in their present condition, be considered as insufferable nuisances. A green lane, which is a parish road, at 91 miles 68 chains, affording a means of crossing the railway, is at present entirely intercepted by a cutting, over which a bridge has been built, but the approaches not having been made up to it, in its present condition it is useless. The traffic upon this lane must be almost insignificant.

At 92 miles 18 chains a parish road in the village of Dorn is carried over a cutting by a bridge, which is complete with the exception of the parapets. A temporary fence has been erected for the security of persons crossing the bridge, which narrows the road. The excavation is 20 feet deep, and has, I am informed, cut off the supply of water from some of the houses in the village, consisting of about a dozen houses, one of which is left in a very precarious state on the edge of the excavation; and the garden of another is likely to fall in unless the retaining walks which are to be built to support the sides of the cutting be soon erected.

At 92 miles 43 chains an accommodation bridge has been constructed to afford a passage through a heavy embankment, which, having forced in the wing walls, and injured the abutments, has completely stopped the communication, the embankment being about 35 feet in height. At 93 miles 65 chains a similar accident has happened, and stopped all access from one side of the railway to the other.

A very serious slip has occurred at Aston Magna, where a cutting skirts the foot of a hill, by which a bridle road is stopped. This cutting will require a considerable outlay before the railway can be carried securely through it.

The total estimate for works upon this contract amounts to 77,658*l.*, including 2,500*l.* for stations, &c., and an extra sum for the heavy slip before mentioned, out of which the probable value of work done amounts to about 43,000*l.* or $\frac{1}{2}$ ths of the whole. The sum paid for land amounts to 31,200*l.*, and the estimated cost of what remains to be purchased is 69,243*l.*, from which therefore it would appear that to complete the Moreton contract, 5 miles 29·60 chains in length; it would require an additional outlay of 103,901*l.* exclusive of permanent way.

The Mickleton adjoins the Moreton contract, and is 3 miles 75·60 chains in length, commencing at 95 miles 8·42 chains, and ending at 99 miles 3·82 chains.

Upon this contract the whole of the land has been purchased, and the works begun throughout, including a tunnel of about half a mile in length, through which a heading has been driven, and all the necessary shafts sunk, and the brickwork lining commenced at each. Unless this heading be kept open, a great deal of damage may be done to the work. The bridges on this length have been completed, and the traffic diverted over them, or the road surface has not been interfered with. The estimate for work upon this contract is 130,490*l.* including 3,500*l.* for stations, &c., and the probable value of work done is about 77,200*l.* or $\frac{1}{2}$ ths of the whole. The cost of land has been 26,217*l.*, and a further sum may be required to complete purchases of about 2,000*l.*; therefore to complete the works, &c. on this, the Mickleton contract, 3 miles 75·60 chains in length, exclusive of permanent way, a further outlay of about 55,290*l.* will be required, which, however, may be increased very considerably if the works remain long in their present condition.

The next portion is called the Evesham contract, and extends from 99 miles 3·82 chains to 116 miles 15·42 chains, being 17 miles 11·42 chains in length.

The line for the first 10½ miles of this contract has been purchased, with the exception of six small portions at various places, amounting together to 56 chains in length, and is all fenced off from adjacent properties, with the exception of about 20 chains. The works over the whole of this distance are very far advanced, and nearly ready for ballasting; the bridges also are completed, with their approaches, except that the approaches of a parish road at Church Honeybourn, at 101½ miles, are not fenced. This bridge is constructed to avoid a level crossing at the foot of an incline of 1 in 100, which was authorized by the Act of Parliament under which the railway is constructed. At 105 miles 12 chains, an occupation road crosses a cutting by a temporary bridge in a very bad condition, almost dangerous, and the side fencing to it is very bad, and a few chains further on a foot-bridge near the town of Evesham is in a very bad and dangerous state, being only 2 feet wide, with a very insecure hand-rail. At 105½ miles, the railway crosses the River Avon, the abutments for the bridge being erected, but the superstructure, intended to be of timber, not yet having been put on. At 106 miles 25 chains, a temporary bridge of a very indifferent character, with bad hand-rails, carries a parish road of considerable traffic across a cutting about 10 feet deep.

At 106½ miles, and again at 109½ miles, the railway crosses the Avon, the abutments being at both places raised ready for the timber superstructure. Near the 110th mile there remains to be purchased about half a mile in length of land, upon which nothing has been done; after which, for upwards of six miles to the end of the Evesham contract the land has been all purchased, and the works nearly completed ready for ballasting. At 111 miles, however, the turnpike-road from Evesham to Worcester is carried across the railway, which is in cutting by a temporary bridge, which somewhat contracts the roadway, and at 114 miles 30 chains the approaches to a parish road bridge over the railway have not been fenced.

The total estimate for works, upon this, the Evesham contract, amounts to 186,622*l.* including 10,750*l.* for stations, &c., out of which the value of works done amounts to about 110,000*l.* or $\frac{11}{100}$ ths of the whole work. The amount paid for the purchase of land is 44,306*l.*, and the estimate of what remains to be paid is 5,230*l.* The total outlay, therefore, required to complete this, the Evesham contract—17 miles 11·60 chains in length—is about 81,852*l.* This contract terminates at the point where the Oxford, Worcester, and Wolverhampton Railway crosses the Birmingham and Gloucester Railway.

The following portion of the main line, commencing at the north end of the Evesham contract, at 116 miles 15·42 chains, 26 miles 4 chains in length, and terminating at 142 miles 19·42 chains, includes four contracts, called Worcester No. 2, Worcester No. 1, Droitwich, and Kidderminster, in which contracts are also included a short branch near Abbott's Wood, 64 chains in length, to connect the Oxford, Worcester, and Wolverhampton with the Birmingham and Gloucester Railway, a branch from Droitwich to the Birmingham and Gloucester Railway at Stoke Prior, 4 miles 9·60 chains in length, with a short branch of 17 chains into the Alkali-works at the latter place, and a connecting branch at Droitwich, 31·40 chains in length, making altogether a length of railway of 31 miles 46 chains, is altogether completed and ballasted ready for the laying of the permanent way, with the exception of the timber superstructure of the Hoo viaduct at 134 miles, and of the Blakedown viaduct at 137½ miles, which are of a heavy nature, and a cutting near the latter viaduct which cannot be excavated until after the completion of the viaduct, the earth being required to fill in a bank at the other end thereof.

Upon these contracts the estimates for works, including 42,000*l.* for stations and station accommodation, amounted to 393,674*l.*, and the value of the work executed may probably be taken at 322,902*l.*, or $\frac{11}{100}$ ths of the whole.

The whole of the land has been purchased or agreed for: 142,035*l.* have been paid for it, and an estimated further amount of 5,601*l.* being considered necessary to complete the purchases; the total amount, therefore, required to complete these 26 miles 4 chains of the main line, and 5 miles 42 chains of branches, exclusive of permanent way, will be 76,373*l.*

The Kingswinford contract commences near the town of Stourbridge, at 142 miles 19·42 chains, and is 3 miles 59·40 chains in length, terminating at 145 miles 78·82 chains. From its southern end for about 1½ miles the land has been purchased, with the exception of about 18 chains in length, and the works, which are heavier than the average, partially commenced, including masonry foundations intended to support timber trestles and superstructure for two viaducts of a heavy character, one at Stourbridge, the other at Brittel-lane, after which no land has been purchased nor work commenced for the remainder of the contract. The estimated cost of works upon this, the Kingswinford contract, was 134,000*l.*, including 10,000*l.* for stations, &c., the probable value of work done being 17,500*l.*, or $\frac{11}{100}$ ths of the whole. The amount paid for land is 13,150*l.*, and the estimated cost of what remains to be purchased is 14,742*l.*; therefore, to complete the whole of the contract, exclusive of permanent way, a further outlay of about 131,242*l.* will be required.

The following contract, commencing at 145 miles 78·82 chains, and terminating at 148 miles 19·42 chains, 2 miles 20·60 chains in length, is called the Dudley contract. Throughout its whole length, with the exception of about 6 chains at the northern end, the land has been purchased, and the works are completed, including a tunnel of rather more than half-a-mile in length up to the formation level, and about one-third of the ballast laid. The works, except through the tunnel, have been made for four lines of way, in order to lay in the sidelines required by the Act of Parliament under which the railway is constructed.

The total estimated cost of this contract, including 17,000*l.* for stations, sidings, &c., is 104,200*l.*; the value of the work done being 78,346*l.*, or $\frac{11}{100}$ ths of the whole. The amount paid for land is 32,985*l.*, and the estimated sum required to complete the purchase of land is 1,019*l.*; therefore, to complete this, the Dudley contract, 2 miles 20·60 chains in length, will require a further outlay of 26,853*l.*, exclusive of permanent way.

The two next contracts, commencing at their southern end at the termination of the Dudley contract, at 148 miles 19·42 chains, and terminating at the junction with the London and North Western, formerly Grand Junction Railway, near Wolverhampton, 154 miles 79·22 chains from Paddington, are 6 miles 59·80 chains in length. The land has been purchased, and the work is well advanced over 55 chains at their southern end, beyond which point no step has been taken towards the construction of the railway beyond serving the necessary notices upon the various landowners along the line of the railway of the extent of the land which will be required for the construction of the railway.

The estimated cost of their construction is 189,000*l.*, including 39,000*l.* for stations, sidings, &c., allowing that the Oxford, Worcester, and Wolverhampton Railway Company only defray the expense of one-third of the passenger and one-half of the goods station at Wolverhampton, the cost of which is to be borne partly by other Companies (the Shrewsbury and Birmingham, and Birmingham, Wolverhampton, and Dudley Railway Companies). Of this the value of work done may probably amount to 15,000*l.*, or $\frac{11}{100}$ ths of the whole. The amount paid for land is 12,435*l.*, leaving an estimated sum of 208,950*l.* to complete the purchase; therefore, to complete the line from the Dudley contract to the junction with the London

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and North Western Railway, a distance of 6 miles 69·40 chains, will require an additional outlay of about 382,950*l.*, exclusive of permanent way.

With respect to permanent way, it appears that there are 88 miles 70·22 chains of main line, divided into two portions, 50 miles 58 chains, being on the south or London side of the junction of the short branch to connect the Oxford, Worcester, and Wolverhampton Railway, with the Midland (Birmingham and Gloucester) Railway at Abbott's Wood, the remaining 38 miles 12 chains being to the north of that point, with branches altogether amounting to 5 miles 42 chains in length. The estimate of the engineer of the line of the cost of permanent way throughout for a railway with the broad gauge alone amounts to 453,105*l.*, towards the laying of which rails and timber to the extent of 147,118*l.* have been purchased by the Company; but as the Act of Parliament for the construction of the railway prescribes that the Company are to lay down and maintain upon the whole extent of the railway, between the point of junction with the Birmingham and Gloucester Railway at Abbott's Wood, and the point of junction with the Grand Junction Railway, near Wolverhampton, as well as on the Branch Railway to Stoke Prior, such additional rails adapted to the gauge of the two latter-named railways as may be requisite for allowing the free and uninterrupted passage of carriages, &c., it would appear that over 38 miles 12 chains of the main line, and 5 miles 42 chains of branches, an additional sum which may be taken at one-half more than the cost of a single-gauge line should be taken, or about 104,880*l.*, making a total cost for permanent way of 557,985*l.*, or remaining to be incurred of 410,867*l.*

The state of the railway, therefore, may be summed up as follows: that at each end of the line a great deal of work remains to be done, but that from Evesham by Worcester, and Stour-bridge to near Dudley, the works are very far advanced and nearly ready for opening, with the exception of stations, and the permanent way not being laid. That the estimated total cost of the railway is as follows:—

Engineering works . . .	£1,430,981
Permanent way . . .	557,985
Land . . .	501,300
Total . . .	£2,490,266

The value of the work done, or materials supplied, may amount to—

Engineering works . . .	£756,448
Permanent way . . .	147,118
Land purchased . . .	354,463
Total . . .	£1,258,029

leaving, as the estimated amount remaining to be expended in the purchase of land and the execution of the works, the sum of 1,232,237*l.*

By a return obtained from the Secretary, hereto appended, it will appear that the following sums have been expended on

	£.	s.	d.
Engineering works	634,878	18	2
Permanent way corrected, according to the statement of the engineer	147,118	0	0
Land and compensation	372,051	2	5
Engineering, including superintendence of construction	90,512	19	7
Total	£1,244,561	0	2

by which it will be seen that there is an arrear of engineering works not yet paid for amounting to about 121,570*l.*

In arriving at the above estimates, I have derived my information solely from personal examination of the line, and from documents in the office of the engineer at Worcester, who afforded me every assistance, and gave me free access to the documents and plans in his office; but the works having been entirely stopped, they have not yet been measured up, nor the contractors settled with; it would therefore be a very long and tedious operation to arrive at the exact value of work done upon the railway, and such as was not, I conceive, contemplated by the instructions of the Commissioners; I have therefore taken what I consider the shortest method of arriving at an approximate idea of the condition of the line. No notice has been taken of several branches which are to be constructed under the powers granted to the Oxford, Worcester, and Wolverhampton Railway Company, as they have not been commenced, and do not form a portion of the main line of communication, and it remains a question of doubt with the Company whether it will be advantageous to construct them or not. I have enumerated all those cases, or the principal portion of them, where it appeared to me in passing over the line that either the public or individuals suffered inconvenience from the incomplete state of the works. Elsewhere the line is as well fenced, and the works in as good a state, as regards the convenience of adjoining proprietors and the public, as it will be when completed, except that when trains are running, the line will be closed against trespassers, and the public will then of course derive that advantage from the construction of the railway which they anticipated when the powers to construct it were ceded by Parliament to the Company.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

J. L. A. SIMMONS,
Capt. Royal Engineers.

SIR,

Worcester, November 7, 1849.

Appendix No. 25.

I BEG to enclose a statement of payments for land, works, and engineering, as requested by your letter of this date.

I have, &c.,

Oxford, Worcester, & Wolverhampton Railway.

J. L. A. Simmons, Esq., Capt. R.E.

NOEL THOS. SMITH, Secretary.

Payments on Contracts for Works, viz.:—

	£.	s.	d.
Bilston	12,435	0	0
Dudley Tunnel	70,927	6	3
" " trial shafts	3,170	3	10
Kingswinford	16,430	0	0
Kidderminster	67,320	0	0
Droitwich	152,505	0	0
Worcester Tunnel	36,140	0	0
Worcester Tunnel, No. 2	32,883	12	7
Evesham	82,530	0	0
Mickleton (including 8,308l. 3s. 4d., balance of cost of plant)	71,937	15	6
Monson	31,200	0	0
Shipton	47,350	0	0
Charlbury	10,050	0	0
Total	£684,878	18	2
Engineering, including superintendence of construction	103,012	19	7
Including timber	12,500	0	0
Land and compensation	372,051	2	5
Estimated total cost of land	497,430	0	0
Surveys and engineering expenses since obtaining the Act, as stated by Mr. Varden, but not including after-expenses which may have been added by Mr. Brunel	53,312	0	0

November 7, 1849.

SIR,

Worcester, November 7, 1849.

ABOUT 135,000l. has been expended on iron rails, and is not included in the statement sent to you this morning.

12,500l. has been expended on timber for the permanent way, and this amount is comprehended under engineering and construction.

I have, &c.,

J. L. A. Simmons, Esq., Capt. R.E.

NOEL THOS. SMITH, Secretary.

Office of Commissioners of Railways, Whitehall,
December 15, 1849.

SIR,

I AM directed by the Commissioners of Railways to inform you that they have carefully considered the several memorials that have been presented to the Board complaining of the inconvenience sustained by the public and individuals in consequence of the non-completion of the Oxford, Worcester and Wolverhampton Railway, and calling upon the Commissioners of Railways to exercise the powers vested in them by the 8 and 9 Vict., c. 184, s. 131; that the Commissioners have also had under consideration the statements, written and verbal, of the Oxford, Worcester, and Wolverhampton Railway Company, expressing their inability, under existing circumstances, to proceed with the completion of the line, and the explanations, written and verbal, of the Great Western Railway Company, in answer to the applications made to the Board, calling on that Company to complete the railway. I am directed to state, that the Commissioners are satisfied, after a careful inquiry and report made by one of their own officers, and by the admissions made by the Oxford, Worcester, and Wolverhampton Company, that the Company is neglecting to proceed with the construction of their line, and that there is no reasonable security that it will be completed within the time limited by the Act.

Under these circumstances the Commissioners, after weighing well the provisions of the statute, in connexion with the statement made by the Great Western Company in relation thereto, are of opinion that it is incumbent upon them, in exercise of the discretion vested in them by the Legislature, to call upon the Great Western Company to proceed with the construction of the line; and I am directed to state, that unless, within one month from the date of this letter, the Commissioners of Railways have some satisfactory grounds for believing that efficient arrangements will be made for ensuring the completion of the line within the time limited by law, they will feel it their duty formally to require the Great Western Railway Company to enter upon the Oxford, Worcester, and Wolverhampton Railway, to proceed

Appendix No. 75.
Oxford, Worcester,
& Wolverhampton
Railway.

with the construction thereof, and to exercise all the powers of the Oxford, Worcester, and Wolverhampton Railway Act in relation thereto.

I am also to inform you that a copy of this communication will be forwarded to the Oxford, Worcester, and Wolverhampton Railway Company.

I have, &c.,

To the Secretary of the
Great Western Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
December 15, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed copy of a communication made this day to the Great Western Railway Company.

I have, &c.,

To the Secretary of the
Oxford, Worcester, and Wolverhampton Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

GENTLEMEN,

Batsford Park, January 10, 1850.

My attention has just been called to an article which appeared in the "Morning Herald" of the 29th December, on the subject of the notice given by you to the Great Western of your intention, after the expiration of a month, to call on them to enter upon and complete the Oxford, Worcester, and Wolverhampton Railway, according to the provisions of the Act of 1845. From the character of the communication, and the paper in which it appears, I am induced to believe that it may be considered the defence set up by the Great Western against your proposed interference.

The writer misrepresents the object of the clause in question, and the intention of Parliament in enacting it, and argues that it was not final against the Great Western, but against the other Company, "if they should hold their powers of construction in abeyance, merely selling shares at a premium, and then failing to perform their other obligations;" and that "the question now to be solved is, whether the latter have neglected to exercise their powers," and states that, "so far from having neglected, they have resorted to all available means, and stop for want of sufficient funds for the further progress of the works, and that to order the Great Western to find capital of their own to complete the line would alter the whole object of the enactment, and convert that into an injury which was intended as a benefit and protection to the Great Western or the public from the neglect of the Oxford, Worcester, and Wolverhampton Company."

The scheme was introduced in the session of 1845, and was the commencement of "the battle of the gauges." The Oxford, Worcester, and Wolverhampton Company was avowedly a creature of the Great Western, and the victory, accorded to it on that occasion, was a Great Western triumph. During the passage of the Bill, among other objections taken to it, was *the insufficiency of the estimate, which was 1,500,000*l.*, with a power to borrow 500,000*l.*, and very strong evidence was given that the line could not be constructed for the money.* This was subsequently fully confirmed by the new estimate given in to the Directors a few months after by Mr. Brunel, increasing the estimate to 2,500,000*l.*, and which is also found to be below the necessary expenditure. There can be now, of course, no doubt that the Bill ought to have been thrown out; but the Committee in both Houses were so prepossessed in its favour that they passed it, although sensible of its deficiency in this important point, and, as a justification for so doing, the clause in question was always put forward as a security to the public for the completion of the line, and an answer to any objection as to the sufficiency of means. The Great Western, in fact, bound themselves as security for the completion, in order to secure the victory to the broad gauge, and the words of the clause prove this, the preamble stating that, "whereas the Great Western Company are willing to undertake, *in case of need*, the due completion of the line," and the enactment empowering, first, the Great Western "to enter and complete, in the event of the other Company failing to do so by neglecting to proceed," &c.; and if the Great Western shall not do so voluntarily, empowering, secondly, the Board of Trade to order them. This latter provision settles the question, and the argument of the writer in the "Morning Herald"—if the clause was intended only as a "benefit and protection to the Great Western" why give compulsory powers to the Board of Trade?

Having opposed the Bill, and anxiously attended to its progress through Parliament, I am induced to think that the true reason for this enactment should be made known to you, as an attempt is obviously being made to misrepresent it.

I have, &c.,

To the Commissioners of Railways.

REDESDALE.

Office of Commissioners of Railways, Whitehall,
January 17, 1850.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the enclosed order relative to the Oxford, Worcester, and Wolverhampton Railway.

I have, &c.,

The Secretary of the
Great Western Railway Company.

H. D. HARNESS,
Capt. Royal Engineers.

Whereas by "The Oxford, Worcester, and Wolverhampton Railway Act, 1845," the Oxford, Worcester, and Wolverhampton Railway Company were authorized to construct a railway from Oxford to Worcester and Wolverhampton, with several Branch Railways therein particularly mentioned; and by the said Act it was provided, that in the event of the said Oxford, Worcester, and Wolverhampton Railway Company failing to complete the said Railway and Branches within the period limited by the said Act, by neglecting at any time to proceed therewith in such manner as to afford a reasonable security for the completion thereof within the aforesaid period, it should be lawful for the Great Western Railway Company, after giving one month's notice of their intention so to do, to enter upon the said railway, and to proceed with the construction thereof, and to exercise all or any of the powers of the said Oxford, Worcester, and Wolverhampton Railway Company in relation thereto, and if at any time the said Oxford, Worcester, and Wolverhampton Railway Company should; in the opinion of the Board of Trade, fail to proceed with the construction of the said railway in manner aforesaid, the said Great Western Railway Company should, on being required so to do by the said Board, enter upon the said railway, and should complete the same as aforesaid: And whereas, the powers given by the said Act to the said Oxford, Worcester, and Wolverhampton Railway Company for the construction of the said railway, have been amended and enlarged by several Acts subsequently passed (that is to say), "The Oxford, Worcester, and Wolverhampton Railway (Amendment) Act, 1846;" "The Oxford, Worcester, and Wolverhampton Railway (Amendment) Act, 1848;" and "The Oxford, Worcester, and Wolverhampton Railway (Deviation) Act, 1848:" And whereas, under and by virtue of an Act passed in the eleventh year of the reign of Her present Majesty, intituled "An Act to give further time for making certain Railways," the period of time limited by the said firstly recited Act for the completion of the said Railway and Branches has been extended for the further period of two years from the expiration of the said period limited by such Act: And whereas the said Oxford, Worcester, and Wolverhampton Railway Company have commenced the construction of the said Railway and Branches: And whereas, by an Act passed in the tenth year of the reign of Her present Majesty, intituled, "An Act for constituting Commissioners of Railways," the powers reserved to the Board of Trade by the said firstly recited Act have been transferred to and are now vested in us, the Commissioners of Railways: And whereas in the opinion of us, the said Commissioners, the said Oxford, Worcester, and Wolverhampton Railway Company are neglecting to proceed with the construction of the said Railway and Branches in such manner as to afford a reasonable security for the completion thereof within the period limited by the said firstly recited Act, and extended as aforesaid: Now therefore we, the Commissioners of Railways, in pursuance of the hereinbefore recited provisions of "The Oxford, Worcester, and Wolverhampton Railway Act, 1845," and by virtue and in exercise of the power and authority for this purpose so vested in us as aforesaid, do hereby require the Great Western Railway Company forthwith to enter upon the said Railway from Oxford to Worcester and Wolverhampton so authorized to be constructed as aforesaid, and to proceed with the construction thereof, and to complete the same in the manner and under and subject to the conditions and provisions in the said recited Acts, or any other Act or Acts of Parliament relating to the said railway mentioned and contained with respect to the construction thereof; and as if the said Great Western Railway Company had by such Acts been authorized to construct the said railway, instead of the said Oxford, Worcester, and Wolverhampton Railway Company. Given under our seal this seventeenth day of January, One thousand eight hundred and fifty.

(Signed)

GRANVILLE,
EDWARD RYAN.

*Office of Commissioners of Railways, Whitehall,
January 21, 1850.*

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you, for the information of the Directors of the Oxford, Worcester, and Wolverhampton Railway Company, the enclosed duplicate of a requisition forwarded to the Great Western Railway Company on the 17th instant.

I have, &c.,

*The Secretary of the**Oxford, Worcester, and Wolverhampton Railway Company.*

H. D. HARNES,

Capt. Royal Engineers.

*London Terminus, Paddington,
January 24, 1850.*

SIR,

I HAVE submitted to the Board of Directors your letter, dated the 17th instant, inclosing a copy of an order of the Railway Commissioners, and I am desirous to acknowledge the receipt of it, acquainting you that the subject will receive the deliberate consideration of the Directors of this Company.

I have, &c.,

*Capt. Harness, R.E.,
&c. &c.*

CHARLES SAUNDERS, *Secretary.*

Appendix No. 75.
Oxford, Worcester,
& Wolverhampton
Railway.

APPENDIX No. 76.

Appendix No. 76. EDINBURGH, PERTH, AND DUNDEE RAILWAY, AND THE GENERAL POST-OFFICE.

Edinburgh, Perth,
and Dundee
Railway, and the
General Post-office.

SIR,

General Post-office, October 18, 1849.

I AM directed by the Postmaster-General to request that you will lay before the Commissioners of Railways the following circumstances relative to the course which the Edinburgh, Perth, and Dundee Railway Company have intimated to this department that it is their intention to pursue with respect to the conveyance of the mails on their line.

The mails have for some time past been forwarded on this railway under the charge of mail-guards, who travel at the fare of second-class passengers, by the ordinary trains of the Company, in accordance with the powers vested in the Post-office, by the provisions of the 11th section of the Act of Parliament 7 and 8 Victoria, cap. 85.

With this arrangement, which has been adopted by the Postmaster-General as a measure of economy, the Railway Company have of late been dissatisfied, and with the view of obtaining a higher rate of payment for the conveyance of the mails, they have now expressed their determination to refuse, on and after the 1st proximo, to allow the mail-guards to take up or leave bags at any of the intermediate stations, and to prohibit any persons being admitted to the platforms for the purpose of giving bags to or receiving bags from the guards, unless payment is made for each bag as a parcel. The effect of this course, if persisted in by the Company, will be to compel the Postmaster-General to incur an increased expense for the railway services, or to deprive the towns on the line of part of the accommodation which they now enjoy.

His Lordship, therefore, requests that you will inform him whether the Commissioners of Railways have any means of obliging the Edinburgh, Perth, and Dundee Railway Company to allow of the mail-bags being exchanged at the intermediate stations, and what steps the Commissioners would recommend him to take with the view of obtaining for the Post-office the privileges intended to be afforded to it by the clause of the Act in question.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

W. MABERLY, *Secretary.*

P. S.—I should add, that the Postmaster-General has directed the officers of this department in Scotland to make the best arrangements they can for serving the towns on this line of railway with their letters, making only partial use of the railway after the 1st proximo, should the Directors carry out their threat; but that this will not prevent many of the places from losing part of the accommodation which they at present enjoy.

SIR,

October 20, 1849.

I AM directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 18th instant, in which you state that the Edinburgh, Perth, and Dundee Railway Company, on whose railway the mails have for some time been forwarded in charge of mail-guards, pursuant to the 11th section of the Act 7 and 8 Vict., c. 85, have expressed their intention, after the 1st proximo, not to allow the mail-guards to take up or leave bags at the intermediate stations, and to prohibit any persons being admitted to the platforms for the purpose of exchanging the bags, unless payment is made for each bag as a parcel.

The Commissioners have recently had occasion to consider these provisions of the Act of the 7 and 8 Vict., in consequence of the refusal of the Irish South Eastern Railway Company to convey mail-guards and bags under the 11th section of that Act, where no contract had been entered into with them for the conveyance of the mails under the Act 1 and 2 Vict., c. 98. And in that case the Commissioners, by the advice of the law officers of the Crown for Ireland, have taken steps for instituting legal proceedings against the Company, under the 17th section of the Act 7 and 8 Vict., c. 85, in order to enforce compliance with the provisions of the Act.

Although in the present case the Company do not altogether refuse to convey the mail-guards with their bags, yet as they refuse to allow that which is necessarily incidental to their conveyance, and essential for the due performance of this service,—the power of taking up and delivering bags at the several stations along the line,—it appears to the Commissioners that the case does not differ in principle from that mentioned above; and that similar measures might be adopted with equal propriety if the Company should persist in refusing the necessary accommodation in the transmission of the mails.

The Commissioners, if desired by the Postmaster-General, will address a communication to the Edinburgh, Perth, and Dundee Railway Company, on the subject of the circumstances stated in your letter, and represent to them the view taken by the Commissioners of the obligations imposed on the Company by the Act above referred to.

I have, &c.,

Lieut.-Colonel Maberly,
&c. &c.

H. D. HARNES,
Capt. Royal Engineers.

SIR,

General Post-office, October 24, 1849.

I HAVE submitted to the Postmaster-General your communication of the 20th instant, stating the opinion of the Commissioners of the Railway Board in regard to the steps which

the Directors of the Edinburgh, Perth, and Dundee Railway Company intend to take on the 1st proximo to prevent the exchange of mail-bags at the intermediate stations on the line; and I am directed to acquaint you, that his Lordship is pleased to acquiesce in the course which the Commissioners propose to adopt, of addressing a communication to the Company, pointing out to them the view taken by the Board of the obligations imposed on the Company under the 17th section of the Act 7 and 8 Vict., c. 85.

Appendix No. 76.
Edinburgh, Perth,
and Dundee
Railway, and the
General Post-office.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,

W. MABERLY, *Secretary.*

SIR,

October 26, 1849.

I AM directed by the Commissioners of Railways to inform you, that they have received from the Postmaster-General a letter, in which it is stated, that the Edinburgh, Perth, and Dundee Railway Company, on whose railway the mails have for some time been forwarded in charge of mail-guards, pursuant to the 11th section of the Act 7 and 8 Vict., c. 85, have expressed their intention, after the 1st proximo, not to allow the mail-guards to take up or leave bags at the intermediate stations; and to prohibit any persons being admitted to the platforms for the purpose of exchanging the bags, unless payment is made for each bag as a parcel.

The Company being bound by the Act to provide conveyance for the mail-guards, with their bags, it appears to the Commissioners that they are equally bound to allow that which is necessarily incidental to their conveyance, and essential to the due performance of this service,—the power of taking up and delivering bags at the several stations along the line,—and that if the Company should persist in the course they propose, it might become the duty of the Commissioners to take steps for enforcing compliance with the provisions of the Act.

I am, therefore, to request that you will represent to the Directors the view taken by the Commissioners of the obligations imposed on the Company by the Act above referred to, and to inform me, with as little delay as possible, whether the Directors, after the matter has thus been brought to their notice, will adhere to the intention they have expressed, in order that the Commissioners may be enabled to judge what measures it may, in that case, be necessary for them to adopt.

I have, &c.,

To the Secretary of the
Edinburgh, Perth, and Dundee Railway Company.

H. D. HARNES,
Capt. Royal Engineers.

SIR,

Edinburgh, October 31, 1849.

I HAVE laid before the Directors of this Company your letter of the 25th inst., and by their directions I beg to send you a copy of the correspondence between them and the Secretary of the General Post-office, Edinburgh, which you will please submit to the Commissioners of Railways.

The Directors have no intention whatever of throwing any obstruction in the way of the Post-office service, or to interfere with the full rights vested in the Post-office authorities by Sect. 11 of the Act 7 and 8 Vict., c. 85; but, at the same time, as acting on behalf of a public body, the Directors consider themselves bound to protect the Company against an unwarrantable extension of these rights to the prejudice of its interests.

The Directors admit the right of the Post-office authorities to avail themselves of the powers conferred by the clause referred to; but they have been advised by high legal authority that the mail-guards, when booked as second-class passengers, are not entitled according to the true meaning and intent of the clause, to any more extended privileges than ordinary passengers.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

HENRY LEES,
Secretary.

CORRESPONDENCE between Mr. LEES and FRANCIS ABBOT, Esq., Secretary to the General Post-office, Edinburgh.

Mr. Lees to Mr. Abbot.

SIR,

Edinburgh, April 5, 1849.

THE Directors, in accordance with the request made by you on the 28th February, have considered the terms on which they can undertake the conveyance of the mails, and they have instructed me to state that they will agree to accept of 1,000*l.* for one year for conveying the mail, under the charge of the Post-office guard, between Edinburgh and Perth and Dundee and the Ladybank Station, by any of the ordinary passenger-trains, and to include the conveyance of the Dunfermline mail-bags between the Thornton Junction Station and the Crossgates Station under the charge of the Company's guard (but without incurring responsibility) by any of the ordinary passenger trains on that part of the line. As there are no trains run on the Dunfermline branch on Sundays, of course the Dunfermline mail would be confined to week days.

Appendix No. 76.
Edinburgh, Perth,
and Dundee
Railway, and the
General Post-office.

For the accommodation of the mail on the main line the Directors will set aside a compartment of a second-class carriage.
I will be glad to hear that the present offer receives the approval of the Post-office authorities.

I have, &c.,

HENRY LEES, *Secretary.*

Mr. Abbot to Mr. Lees.

SIR,

Edinburgh, April 5, 1849.

I BEG to acknowledge receipt of your letter of this date, and as it is yet a question undecided, whether the Postmaster-General will require to send bags on the Branch Railway from Thornton to Crossgates, I shall feel obliged if the Directors of the Railway will be good enough to state, separately, the sum demanded for this particular service, as distinguished from the service of conveying guards and bags in a separate compartment between Edinburgh and Perth, and Dundee and Ladybank, and Broughty Ferry, by any of their ordinary passenger-trains, and I shall be further obliged by an early reply, that I may bring the matter before the Postmaster-General.

I have, &c.,

F. ABBOT, *Secretary.*

Mr. Lees to Mr. Abbot.

SIR,

Edinburgh, April 7, 1849.

I WILL be unable to state what sum the Directors have proposed to charge for the conveyance of the bags on the Dunfermline line separately from the service on the main line. The fact is, that the details of the charge in the aggregate greatly exceeded the sum which I named in my letter of the 5th instant. They did not consider that sum a sufficient remuneration for the service, but as the service is a public one, and as they are desirous of giving the district with which the line is connected the benefit of expeditious conveyance of the mail, they fixed upon the stamp sum as, in their opinion, less than the Company ought to receive, and which would, therefore, be acquiesced in by the Post-office. I doubt, therefore, if they will consent to make an abatement upon it, although the Dunfermline mail should not yet be placed upon the line. If you wish me, however, I shall bring the matter again under their notice.

I have, &c.,

HENRY LEES, *Secretary.*

Mr. Abbot to Mr. Lees.

SIR,

Edinburgh, April 7, 1849.

I BEG to acknowledge the receipt of your communication of this day's date, and to inform you, that I shall feel obliged if you will enable me to report the lowest sum for which the Directors of the Edinburgh and Northern Railway will undertake the service between Edinburgh and Perth, Ladybank and Dundee, or Broughty Ferry, district from the service of conveying bags on the Branch Railway between Thornton Station and Crossgates, as I have no expectation that the Postmaster-General will require the latter service in any event before the line is opened to Dunfermline.

I have, &c.,

F. ABBOT, *Secretary.*

Mr. Lees to Mr. Abbot.

SIR,

Edinburgh, April 11, 1849.

YOUR letters of the 5th and 7th instant I have laid before the Directors of this Company, at their meeting this afternoon. In naming 1,000*l.* as the sum for which they were willing to undertake the conveyance of the mails through Fife, the Directors made a very large abatement indeed on the sum, which, according to their calculations, they considered the Company entitled to receive. They cannot, therefore, specify any particular sum as being the proportion chargeable for the service on the Dunfermline line; and although it is not intended to forward the Dunfermline bags by railway, the Directors cannot make any deduction from the sum named in my letter of the 5th instant, which, on re-consideration, they deem a moderate allowance for the service to be performed.

I have, &c.,

HENRY LEES, *Secretary.*

Mr. Lees to Mr. Abbot.

SIR,

Edinburgh, October 2, 1849.

I AM directed to request your attention to the practice adopted by the Post-office in the conveyance of the mails by this line and the Ferries. While the Post-office authorities have

availed themselves of the clause in the Act which provides for the conveyance of the mail-guard with bags, on payment of an ordinary passenger fare, by any of the ordinary trains upon the same conditions as any other passenger, they have, unwarrantably, extended its provisions, by causing the mail-guard, at various stations along the line, to hand off mail-bags to parties connected with the Post-office, and to receive others in exchange, without any payment to the Company for the bags so transmitted. Although the Directors have the utmost desire to accommodate this branch of the public service, a due regard to the interests of the Company requires that the practice referred to, which is not permitted to an ordinary passenger, should no longer be allowed; and I am, therefore, now desired to intimate, that they have instructed their officers, at the various stations, on and after Wednesday the 10th current, to charge the ordinary parcel rates for every mail bag left at, or taken from, any intermediate station on the line, and that the officers of the Post-office will not be permitted access to the platforms at intermediate stations to receive or deliver bags, unless the ordinary parcel rates be paid for those bags.

I am further directed to inform you, that the provisions of the Act referred to, not being applicable to the conveyance of the mails across the Burntisland, and Granton, and the Tay Ferries, should the Post-office authorities continue to send the mails across these ferries on and after the day I have mentioned, the Directors will claim compensation for their conveyance under the powers of the Acts constituting these ferries.

I have, &c.,

HENRY LEES, *Secretary.*

Mr. Abbot to Mr. Lees.

SIR,

Edinburgh, October 3, 1849.

I BEG to acknowledge the receipt of your letter of the 2nd instant, and to inform you, that I will forward it forthwith to the Postmaster-General.

In regard to the latter portion of your letter, I can only at present suggest to the Directors the expediency of further consideration before they issue any instructions to their officers the effect of which will be to obstruct Her Majesty's mails and the due performance of the public service, as I have no authority to admit the principle on which they claim payment of a charge on the bags taken up and given out by the guards travelling in their carriages under the provisions of a special clause in an Act of Parliament, or to make the payment demanded, without the previous sanction of the Postmaster-General, which cannot be obtained before the 10th instant.

I have, &c.,

F. ABBOT, *Secretary.*

Mr. Abbot to Mr. Lees.

SIR,

Edinburgh, October 6, 1849.

I TRANSMITTED the letter I received from you on the 3rd instant to the Secretary to the Post-office Department, London, to be laid before the Postmaster-General for his instructions, and I have by this afternoon's post received his reply, stating that, as his Lordship is in Ireland, it is not possible to obtain his decision before the 10th instant. In the meantime, Colonel Maberly informs me, that he cannot admit the claim preferred by the Directors of the Edinburgh, Perth, and Dundee Railway, by sanctioning payment of the unusual charge demanded on the mail bags delivered and taken up by the mail-guard on his way through Fifeshire; and directs me to forward these bags as heretofore, leaving it to the discretion of the Directors to obstruct the public service by preventing the duties of this department being performed by its servants, as has been done hitherto, if they think proper to carry out the orders stated to have been issued to the station-masters on the line. I have to add, that if such orders be carried into effect, and the servants of the Post-office are obstructed in the performance of the public service, the morning despatch from Edinburgh will be discontinued, and the afternoon bags be sent by such means, other than the railway, as can be arranged, and the circumstances under which the Post-office is compelled to resort to such measures will be stated to the public and the Government.

I have to request you will lose no time in making known this determination to the Directors of the Railway.

I have, &c.,

F. ABBOT, *Secretary.*

Mr. Lees to Mr. Abbot.

SIR,

Edinburgh, October 6, 1849.

I RECEIVED your letter of the 3rd instant in reply to mine to you of the previous day's date, and in consequence of your representation that, from the absence of the Postmaster-General, in Ireland, his Lordship's instructions could not be obtained previous to the 10th instant, the day on which the station-masters on the line were directed to act upon the instructions to charge for the mail-bags dispatched from intermediate stations, I received authority to suspend these instructions to the 18th instant, to afford time for communicating with his Lord-

Appendix No. 76.
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General Post-office.

Appendix No. 76. ship, on the understanding, however, that the claim of the Company to the charges proposed should run from the former date.
 ———
 Edinburgh, Perth, But your letter of this date, if I understand it aright, communicates the determination of the
 and Dundee Post-office authorities to resist the legal demands of the Directors of the Company, and if so,
 Railway, and the there will be no occasion to suspend the instructions given to the station-masters. If, however,
 General Post-office. I am wrong in this, and that further time is required for consideration, there will be no hesita-
 tion on the part of the Directors to give it.

Should the Post-office authorities prefer inconveniencing the public to the payment of reasonable compensation to the Company for the service performed, the burden will rest with the former, and the Directors of the Company do not fear a representation on the subject to the public, who will not fail to see that the former offers of the Company were unusually moderate, and afforded a lower rate of compensation than is given to the other Scottish Railway Companies.

I will not have an opportunity of communicating with the Directors before Wednesday next.
 I have, &c.,

HENRY LEES, *Secretary.*

———
Mr. Abbot to Mr. Lees.

SIR,

Edinburgh, October 8, 1849.

I HAVE just received your letter dated the 6th instant, and beg to inform you, that the Post-office does not admit the legality of the demand made by the Directors, for payment of a charge on the bags taken up and given out by the guard travelling in the railway, under the provisions of a special clause in an Act of Parliament on the public service as common parcels, which your letter appears to assume, but on the contrary, considers that such a claim is not legal, and contrary to the intention of the Act. This is, however, a matter which must be decided by reference to the Acts, and the legal authorities of the Crown. In the mean time, as I have already stated, I am not authorized to admit the claim in any way, by making payment of a charge on these bags, and am instructed by Colonel Maberly to forward them as usual, leaving it to the discretion of the Directors whether to act on the instructions they have issued or not, before the legality of their claim is substantiated. If the instructions be postponed, it will not prejudice any claims the Directors may have on this department should the matter be decided in their favour hereafter.

I have, &c.,

F. ABBOT, *Secretary.*

———
Mr. Lees to Mr. Abbot.

SIR,

Edinburgh, October 9, 1849.

AFTER replying to your letter of the 6th instant, I forwarded it to one of the Directors for his instructions, and I have his answer this morning, authorizing me to suspend the orders given to the station-masters until 1st November next, that full time may be given to admit of your communicating with the Postmaster-General, and that there may exist no ground whatever for charging the Company with precipitancy, or with indifference to the regularity of the public service.

I, therefore, beg to acquaint you, that the orders referred to will be suspended until the day I have named.

I have, &c.,

HENRY LEES, *Secretary.*

———
Mr. Abbot to Mr. Lees.

SIR,

Edinburgh, October 9, 1849.

I BEG to acknowledge the receipt of your letter of this date, acquainting me that the instructions to the station-masters on the Edinburgh, Perth, and Dundee Railway, to charge the ordinary parcel rates for every mail-bag brought to, or taken from, the stations, and not to allow the officers of the Post-office access to the platforms, to receive or send off their bags, unless the ordinary parcel rate be paid, have been suspended from the 16th instant to the 1st-November.

I have, &c.,

F. ABBOT, *Secretary.*

———
Mr. Lees to Mr. Abbot.

SIR,

Edinburgh, October 23, 1849.

REFERRING to my letters to you of 2nd and 9th instant, the Directors of this Company desire me to remind you, that the period to which they consented to postpone their instructions to the station-masters, with reference to the charge for intermediate mail-bags, is near at hand, and to state, that they trust you have now had an opportunity of communicating with the Postmaster-General on the subject.

The inquiries which the Directors have made in the interval confirm them in the opinion, that the practice of causing the mail-guards to leave and take up mail-bags at intermediate

stations on the line, is wholly unwarranted by the Act 7 and 8 Vict., c. 85, by which mail-guards with bags are directed to be carried on the same terms as ordinary passengers.

In order, however, to prevent misunderstanding at the intermediate stations, and to avoid even the appearance of a disposition to obstruct the Post-office service, the Directors instruct me to intimate to you, which I now beg to do, that should the practice referred to, of leaving or taking up mail-bags at any station between the termini of the railway be persevered in beyond the 31st current, it is to be distinctly understood, that the Company will hold that the Post-office authorities depart from the provisions of the above-mentioned statute, and avail themselves of those of the prior Act 1 and 2 Vict., c. 98, that the Company will accordingly instruct their servants to decline receiving payment of passenger fares from the mail-guards, and will claim such amount of compensation as shall appear adequate to the service to be performed, which, in case of disagreement, will fall to be settled in terms of the last-mentioned Act.

I have, &c.,

HENRY LEES, *Secretary.*

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Railway, and the
General Post-office.

Mr. Abbot to Mr. Lees.

SIR,

Edinburgh, October 24, 1849.

I BEG to acknowledge the receipt of your letter of the 23rd instant, referring to the instructions which have been issued to the station-masters on the railway, to prevent the officers of this department having access to the platforms to perform their duty in connexion with the posts of the country, at the intermediate stations.

In answer, I beg to state, that in consequence of the intimation which you sent me on the 9th instant, that these instructions were only suspended to the 1st November, I have received directions from the Postmaster-General to take such measures as may be necessary to obviate, as far as possible, the inconvenience to the public which must be the consequence of the instructions issued by the Directors, and arrangements have been made accordingly for this purpose, which will commence on the 1st proximo, as it appears from your present letter, that although the Directors have modified their intended proceedings, they do not abandon the claim which, according to the opinion of the law officers of this department is illegal, and in direct contravention of the meaning and intent of the clause in the Act of Parliament (Act 7 and 8 Vict., c. 85), which was specially inserted by the Government to meet such a case as has now occurred.

As the demand is, therefore, considered by this department as illegal, I am not prepared to admit it by any concessions whatever, or to give up any right or privilege granted to the Post-office Department, for the purpose of enabling it to perform the public service, under the special enactment in the statute above quoted, under which bags have been taken up and given out, hitherto, by the guards at intermediate stations. To avoid, however, entering into litigation with the Railway Company on this point, unless it be forced on the department by the proceedings of the Directors, the arrangements, in contemplation to take place on the 1st November, will render it unnecessary for any bags to be taken up by the guards at any intermediate stations, and no bags will be delivered out by the guards at any station, except at the place for which he has taken his ticket. I presume that the Directors will not dispute that this arrangement will be in accordance with the clause of the statute authorizing the Postmaster-General to send a guard, with bags, by any ordinary trains, at the fare of a second-class passenger. If the Company refuse to receive any fare from the guard when tendered them, under the provisions of this Act, the refusal will not give any claim to higher compensation, nor can any arbitration be necessary in a case specially provided for by the statute; and you be pleased to state this distinctly to the Directors, that they may understand that the latter part of your letter is not relevant to the present circumstances.

I must, at the same time, direct the attention of the Directors to the Act 10 and 11 Vict., under which the property in the Burntisland Pier, and the ferry between the same and Granton, was vested in the Edinburgh and Northern Railway Company, and especially to the clause section 14, by which you will find that, as regards this pier, and all matters connected therewith, or uses to which the same may be applied, the rights of the Crown are reserved, and any person in the employment of the Post-office (amongst other public departments) is exempted from the control or regulations which may be made by the Directors, as regards ordinary passengers, and under this Act, the Postmaster-General, or his officers, have full power and license of free access and egress when in performance of the public service, and may, as regards the pier and all matters connected therewith, perform any duty in taking up, exchanging, or delivering bags, without let or hindrance, although the guard may be at the time travelling as a second-class passenger by the railway from or to Edinburgh, and any part of Fife-shire, and it is intended to use this privilege under the sanction of that Act.

I request this letter may be laid before the Directors as soon as possible.

I have, &c.,

F. ABBOT, *Secretary.*

Mr. Lees to Mr. Abbot.

SIR,

Edinburgh, October 31, 1849.

YOUR favour of the 24th instant I have now had an opportunity of submitting to the Directors of this Company.

The Board disclaim all intention of obstructing the Post-office service; they have neither

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 ———
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the inclination nor the power to interfere with the privileges conferred upon the Post-office authorities by Act of Parliament, but the Directors, as Trustees of a public body, feel that they are bound to see that those privileges are not exceeded to the prejudice of the Company's interests.

The Board do not dispute, and never disputed, the right of the Post-office authorities to avail themselves of the powers conferred by clause 11th of the statute 7 and 8 Vict., c. 85; but they conceive that, when mail-guards are booked as second-class passengers, they are not entitled, according to the true meaning and intent, and sound and legal construction, of the clause referred to, to any more extended privileges than ordinary passengers.

With respect to the rights claimed as regards the Burntisland Ferry Pier, the Board have no power or intention of curtailing any rights the Crown may be supposed to possess. At the same time they are at a loss to understand the meaning and object of the communication on this head.

I have, &c.,

HENRY LEES, *Secretary.*

SIR,

Edinburgh, November 8, 1849.

REFERRING to my letter to you of 31st ultimo, sending copy of the correspondence between the Directors of this Company and Mr. Abbot, secretary of the Post-office here, I now beg to send you copy of a letter received from Mr. Abbot, since that correspondence was sent you, with a copy of the Directors' answer to it, and which I am directed to request that you will be pleased to submit to the Commissioners.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

HENRY LEES, *Secretary.*

ADDITIONAL CORRESPONDENCE between FRANCIS ABBOT, Esq., SECRETARY GENERAL
 POST-OFFICE, EDINBURGH, and MR. LEES.

Mr. Abbot to Mr. Lees.

SIR,

Edinburgh, November 2, 1849.

I BEG to acknowledge the receipt of your letter of the 31st ultimo, and will transmit it to the Postmaster-General, with reference to our former correspondence. His Lordship will doubtless be pleased to find that the Directors of the Edinburgh, Perth, and Dundee Railway Company disclaim all intention of obstructing the Post-office service, although such was the only construction that could be put on your communications, and the orders issued to the station-masters to prevent the officers of the department from performing their public duties as heretofore; the apparent object being to compel the department to comply with a demand which is considered by the law officers of the Post-office as illegal, or accede to terms which are deemed exorbitant for the services required from the railway.

The clause in the Act to which you refer having been inserted in the statute by the Government at the instance of the Postmaster-General, this department maintains its own opinion, under legal advice, as to the true meaning and intent of the clause and the objects it was intended to meet, which entirely differs from the view the Directors have taken of this point.

My object in referring to the Act vesting the property in the Burntisland ferry and pier in the Edinburgh, Perth, and Dundee Railway Company, was simply to remind the Directors of the rights and privileges of the Crown with regard to the pier and ferry, in order that there might be no misunderstanding in this respect, when the officers of the Post-office required to use either in the execution of their duties in the public service.

I am, &c.,

F. ABBOT, *Secretary.*

Mr. Lees to Mr. Abbot.

SIR,

Edinburgh, November 7, 1849.

In reply to your letter of the 2nd instant, which I laid before the Board at their meeting to-day, I am instructed to state that the Directors have no doubt whatever as to the construction and legal effect of the 11th clause of the Act 7 and 8 Vict., c. 85. They have taken the opinion of eminent counsel, and the result of that opinion has been to confirm them in their previous views, that mail-guards, taking out their tickets from one station to another on the line, at second-class fares, travel on the same conditions as ordinary passengers, and are in no respect entitled to more extended privileges—certainly none of a nature to incommode their fellow-passengers; and that if the Post-office authorities require any extra service to be undertaken by the Company, they have ample powers of enforcing its due performance under the provisions of the Act 1 and 2 Vict., cap. 98, on payment of such remuneration as shall, in the event of difference between the parties, be determined by the award of arbiters mutually chosen.

The Directors consider it unnecessary to notice the construction which you have thought proper to attach to acts which have been forced upon them in discharge of their duties to their

constituents—a construction which, according to their understanding of my letter of 23rd October last (which you seem to have overlooked), is not justified by the actual facts of the case.

The Directors may, however, be permitted to remind you that at their conference with yourself, and in the course of the subsequent correspondence, they exhibited every disposition to submit the terms which you designate as exorbitant to arbitration—a mode of settlement which, from some unexplained cause, the Post-office department have not thought fit to avail themselves of, but which is still open to them.

The Directors cannot help remarking that, in dealing with this Company on principles different from those adopted in negotiations with other railways, the apparent object of the Post-office has been, not so much to effect a reasonable arrangement, either by arbitration or otherwise, as to compel this Company to accede to terms altogether inadequate to the service required to be performed, without reference to the public convenience and accommodation, which have been sacrificed, not by any measure emanating from this Board, but by the voluntary act of the Post-office.

I have, &c.,

HENRY LEES, *Secretary.*

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Edinburgh, Perth,
and Dundee
Railway, and the
General Post-office.

*Office of Commissioners of Railways, Whitehall,
November 23, 1849.*

SIR,

I HAVE been directed by the Commissioners of Railways to state to you, for the information of the Postmaster-General, that, on the receipt of your letter of the 24th ultimo, they communicated with the Edinburgh, Perth, and Dundee Railway Company on the subject of their refusal to convey the mail-bags and guard, and that they have also taken the opinion of the Lord Advocate of Scotland on the question of the Company's liability; and the Commissioners now wish to be informed whether the Postmaster-General is desirous that they should instruct the Solicitor to the Treasury to institute legal proceedings under the 7 and 8 Vict., cap. 85, sec. 17, against the Edinburgh, Perth, and Dundee Railway Company, pursuant to the opinion of the Lord Advocate of Scotland, to oblige that Company to carry the mail-bags and guard as required by the Post-office.

I have, &c.,

To Colonel Maberly,
General Post-office.

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

General Post-office, December 1, 1849.

I HAVE submitted to the Postmaster-General your communication of the 23rd ultimo; and I am directed to acquaint you, for the information of the Commissioners of Railways, that his Lordship considers it very desirable that the Commissioners should instruct the Solicitor to the Treasury to institute legal proceedings against the Edinburgh, Perth, and Dundee Railway Company, pursuant to the opinion of the Lord Advocate of Scotland, to oblige that Company to carry the mail-bags and guards, as required by the Post-office.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

W. MABERLY.

*Office of Commissioners of Railways, Whitehall,
December 3, 1849.*

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you the inclosed copy of correspondence between this department and the Postmaster-General relative to the refusal of the Edinburgh, Perth, and Dundee Railway Company to convey the mail-bags and guard, together with copy of correspondence with the Railway Company, and copy of the opinion of the Lord Advocate of Scotland on the case in question; and to request you to take such steps as may be deemed advisable by the law-officers of the Crown to enforce the law under the provisions of the 7 and 8 Vict., cap. 85, sec. 17.

I am also to request that the notice required by the 18th section of the same Act may be prepared and remitted to this office with as little delay as possible.

I have, &c.,

G. Maule, Esq., Solicitor to Treasury.

H. D. HARNESS,
Capt. Royal Engineers.

SIR,

General Post-office, January 12, 1850.

REFERRING to the correspondence which has taken place relative to the refusal of the Edinburgh, Perth, and Dundee Railway Company to convey the mail-guards and bags, as required by the Act of Parliament, I beg to forward to you, for the information of the Commissioners of the Railway Board, copy of a communication from the Company's secretary to Mr. Abbot, the secretary of this department in Edinburgh, together with a copy of that

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Appendix No. 76. officer's reply and report on the matter; and to state that his Lordship thinks it right to send these documents to the Commissioners without taking any steps in the case, since proceedings have been commenced against the Company.

Edinburgh, Perth, and Dundee Railway, and the General Post-office.

I have, &c.,
W. MABERLY.

Capt. Harness, R.E.,
&c. &c.

Edinburgh, December 31, 1849.

I BEG to forward to you a letter I have this morning received from the secretary to the Edinburgh, Perth, and Dundee Railway Company, with reference to the difference between this department and the Company as to the privileges and rights granted to the Post-office by the clause in the Act 7 and 8 Vict., cap. 85.

This letter is written in consequence of the appeals which have been made to this Railway Company by a deputation from a county meeting in Fifeshire, with the object of having the former arrangements restored, and the bags again taken up and dropped on the railway at the intermediate stations, as before the 1st November last.

This deputation has called on me several times, and also a deputation from the Chamber of Commerce of Edinburgh, for the purpose of obtaining explanations as to the present arrangements, and the cause of the change which took place on the 1st November, and I have given the parties every information on these points; in regard, however, to the present communication from the Railway Company, and any steps that may be taken thereon, I have cautiously abstained from giving any opinion, simply stating that I would forward to the Postmaster-General, for his consideration, any representation or concession which the Directors of the railway might think proper to make; this is the only meaning of the present proposal having had my "concurrence."

The deputation (who were here again this morning) have been informed by the Directors that they have received an intimation from the Treasury of proceedings having been commenced against them on this case, I presume, therefore, the enclosed will be referred to the Railway Commissioners, who will decide whether the course proposed by the Company can be entertained, I can only say that it will be *most desirable on every account*, that the legal rights of the Department should be ascertained with the least possible delay, and I would urge that, if it can be done consistently with the proceedings of the Railway Commissioners now in progress, the former arrangements of the Posts in Fifeshire should be resumed *without any delay*.

I have, &c.,

Lieut.-Colonel Maberly.

F. ABBOT, Secretary.

SIR,

Edinburgh, December 29, 1849.

A DEPUTATION from the Commissioners of Supply of the county of Fife met at their request with the Directors of this Company on the 27th instant, with the view of submitting a proposal, which, from previous communications with you, they stated had your concurrence, and which had for its object the resumption of the mail service on this line.

The deputation suggested, that in order to put an end to the inconvenience to which the public were now subjected, this Board should agree to address a letter to you expressive of their willingness to resume the service as heretofore, on the understanding that the Company should take the first opportunity *pro formâ*, one or other of the Post-office officials in the discharge of his duties, whereupon the Post-office authorities would at once institute legal proceedings to assert the right they claim under the Act 7 and 8 Vict., cap. 85, to send a mail-guard as an ordinary passenger, with the privilege of delivering and recovering bags at intermediate stations.

Upon an anxious consideration of the above proposal, the Directors regret that they cannot, with a due regard to the interests of this Company, agree to commit an overt act of obstruction of the nature referred to, more especially as it appears no ways necessary for enabling the Post-office authorities to vindicate their legal rights.

As the Directors have every desire, however, to give effect, in so far as they can consistently do so, to the suggestions of the deputation, and in order to the immediate removal of the inconvenience from which the public are suffering, I am instructed to lay before you the following alternative proposed, which the Directors trust and believe will effectually accomplish the object in view.

The Directors are ready to resume the service of the Post-office as formerly, or in such other way as may be desired, on condition that the Postmaster-General will consent to leave the amount of remuneration or compensation to be settled by the award of arbiters to be eventually named in terms of the section of the statute 1 and 2 Vict., cap. 98.

Or, alternatively, the Directors offer to resume service of the Post-office as formerly, on the following conditions:—1st. That the Postmaster-General shall forthwith raise an action of declaration against the Company for establishing by the judgment of a court of law the rights of the Post-office authorities, as asserted by them, to send a mail-guard as an ordinary passenger with the privilege of delivering and receiving mail-bags at the intermediate stations. And, 2nd. That in the event of the Postmaster-General failing in that action, the amount of remuneration or compensation shall be settled by arbiters mutually named, in terms of the above-mentioned statute.

I am further instructed to intimate that the Directors are ready to give every facility to the speedy determination of the points at issue, and they will concur in any measure for obtaining an immediate judgment of the Court.

*Francis Abbot, Esq.,
to the Secretary General Post-office, Edinburgh.*

I have, &c.,
A. LEES, *Secretary.*

Appendix No. 76.
Edinburgh, Perth,
and Dundee
Railway, and the
General Post-office.

*Office of Commissioners of Railways, Whitehall,
July 14, 1850.*

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you, for your information, the enclosed copy of a letter (with its enclosures) from the General Post-office, in reference to the correspondence that has taken place on the refusal of the Edinburgh, Perth, and Dundee Railway Company to convey the mail-bags and guard.

I have, &c.,

*G. Maule, Esq.,
Solicitor to the Treasury.*

H. D. HARNESSE,
Capt. Royal Engineers.

APPENDIX No. 77.

IRISH SOUTH EASTERN RAILWAY AND GENERAL POST-OFFICE.

MY LORDS,

General Post-office, March 19, 1849.

Appendix No. 77.
Irish South Eastern
Railway and
General Post-office.

I HAVE the honour to represent to your Lordships, that the Directors of the South Eastern Railway Company of Ireland have disputed the right claimed by this department, under the 11th section of the Act of Parliament, 7th and 8th Vict., c. 85, of sending a mail-guard in charge of the post-letter bags by trains already running upon their line between Carlow and Bagnalstown, at the fare of a second-class passenger; and that they have actually refused to convey the guard and letter-bags under the ordinary passenger regulations, alleging that the privilege given to the Post-office under the Act above recited is confined to railways upon which the necessary steps for enforcing the provisions of the Act 1 and 2 Vict., c. 98, have been previously taken, which is not the case with regard to the South Eastern Railway of Ireland.

As this dispute involves a principle of much importance to the department, I have given directions for consulting the law officers of the Crown in Ireland, as to the interpretation to be put upon the clause referred to of the 7th and 8th Vict., c. 85. In the mean time, I have thought it right to communicate the circumstances of the case to your Lordships, as it is possible that the Commissioners of Railways may have sufficient authority to compel the Company to comply with the clear intention of the clause of the Act of Parliament to which I have referred.

I have, &c.,
CLANRICARDE.

*To the Right Honourable the
Lords Commissioners of Her Majesty's Treasury.*

*Office of Commissioners of Railways, Whitehall,
March 29, 1849.*

SIR,

I HAVE been directed by the Commissioners of Railways to inform you, in reference to a letter from the Postmaster-General, of the 19th instant, addressed to the Lords Commissioners of Her Majesty's Treasury, and referred by them to this department, that the Commissioners are of opinion that the first part of the 11th clause of the 7th and 8th Vict., c. 85, is confined by the manner in which it is expressed to railways on which mails are conveyed, subject to the conditions of the 1st and 2nd Vict., c. 98; but that these restrictive expressions do not appear to them to apply to the part of that clause empowering the Post-office to send mail-guards with bags by any train other than a mail-train.

The powers of requiring a mail-train to be provided is given by 1 and 2 Vict. The 7th and 8th Vict. extends the provision, making the Post-office to send bags by *any other train*. There does not appear to be anything to disturb the latter power to the case of railways on which the former power is actually exercised. If this view is correct, the Commissioners are empowered under the 16th section of the 7th and 8th Vict. to take steps to compel the Company to comply with the provisions of this Act; but it would seem desirable, before any steps are taken, that the Commissioners should be informed of the opinion given by the law officers of the Crown in Ireland.

I have, &c.,

*J. Parker, Esq., M.P.,
&c. &c.*

H. D. HARNESSE,
Capt. Royal Engineers.

SIR,

General Post-office, June 18, 1849.

I BEG leave to acquaint you, that the Postmaster-General has received the instructions of the Lords of the Treasury to communicate to the Commissioners of the Railway Board the following circumstances relative to the refusal of the South Eastern Railway Company of

Appendix No. 77. Ireland, to convey mail-bags in accordance with the 11th section of the Act of Parliament 7 and 8 Vict., c. 85.
 Irish South Eastern Railway and General Post-office.

In the beginning of the present year the Postmaster-General, in order to accelerate the conveyance of the day mail to Kilkenny, authorized the transfer of the bags to the railway between Carlow and Bagnalstown, and a messenger was accordingly appointed to take charge of the bags for that distance; the Company declined to convey the messenger, and his Lordship imagining that their refusal was grounded on the circumstance of the man not being a "mail-guard," directed a regularly appointed mail-guard to proceed with the bags. On presenting himself at the station, the Company, however, still persisted in their refusal to allow him to travel in charge of bags at the fare of a passenger, alleging as a reason that the interpretation put upon the clause of the Act of Parliament by the Postmaster-General was erroneous, and that the privilege given by the Post-office under the Act above recited is confined to railways upon which the necessary steps for enforcing the provisions of the Act 1 and 2 Vict., c. 98, have been previously taken, which is not the case with regard to the South Eastern Railway of Ireland. The solicitor of this department considered that the Postmaster-General's interpretation of the clause was correct, and his Lordship directed the case to be submitted to the law officers of the Crown in Ireland, whose opinions (copies of which are enclosed) coincide with that of Mr. Peacock, viz., that the Company have put a wrong construction on the clause of the Act of Parliament, and that they are not justified in adopting the course they have done. I am, therefore, directed to request that you will have the goodness to place this communication before the Commissioners of Railways, and that you will acquaint me, for the information of his Lordship, what course the Commissioners consider it advisable to pursue in the matter.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

J. TILLEY,
 Assistant Secretary.

Office of Commissioners of Railways, Whitehall,
 June 21, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to inform you, that they have received a communication from the Postmaster-General, stating that the Irish South Eastern Railway Company have refused to convey a guard and mail-bags in accordance with the provisions of the Act 7 and 8 Vict., c. 85, and that in the opinion, both of the Commissioners and of the law officers of the Crown in Ireland, such refusal is a violation of the provisions of that Act. I am also to inform you that, if the Company persist in their refusal, it will be necessary for the Commissioners to grant their certificate in the manner prescribed by the 17th section of the same Act, in order that the necessary steps may be taken to compel the Company to comply with the provisions of the Legislature.

I have, &c.,

The Secretary of the
 Irish South Eastern Railway Company.

H. D. HARNESS,
 Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
 June 21, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 18th instant, requesting their opinion upon the circumstances under which the Irish South Eastern Railway Company have refused to carry a guard and mail-bags, according to the provisions of the Act 7 and 8 Vict., c. 15, and to inform you that the Commissioners remain of the opinion expressed in their letter to the Treasury on this subject, dated the 29th March, viz., that the refusal of the Company is a breach of the duty imposed upon them by the express provision of the Act above mentioned; that they have caused the Company to be informed of the views taken by this Board of the provision of that Act, and requested the Company to state whether they intend to persist in their refusal to carry the mails in the manner required; that the Commissioners are of opinion, if the Company state their intention to continue in the present course, that it will be advisable for the Commissioners to grant their certificate in the manner pointed out by the 17th section of 7 and 8 Vict., c. 85, to the Attorney-General of Ireland, in order that he may take such steps as he may think proper to compel the Company to comply with the provisions of the Act. Upon receiving from the Company an answer to their letter, the Commissioners will communicate the result, with their opinion thereon, to the Postmaster-General.

I have, &c.,

Lieut.-Colonel Maberly,
 &c. &c.

H. D. HARNESS,
 Capt. Royal Engineers.

SIR,

9, Kildare-street, Dublin, July 6, 1849.

IN reply to your letter of the 21st ultimo, referring to a complaint by the Postmaster-General of this Company's refusal to convey the mail-bags and guard at the fare of a second-class passenger, I am instructed to state, that the Board in their refusal were actuated by no desire to obstruct the public service, but have been, and are most willing to carry the mail-

bags in the manner required, provided the arrangements for conveyance of the mails prescribed by 1 and 2 Vict., c. 98, are likewise entered into.

The Board would beg leave to submit, that the 7 and 8 Vict., c. 85, has not repealed but merely extended the provisions of the 1 and 2 Vict., c. 98, and only contemplates the transmission of mails by railway in cases of emergency, and "subject to the conditions as to payment for service performed, prescribed by the Act," so extended, and that it would be a hardship to compel a Company to convey the mails in the manner now required without also affording them the advantages which the general Act regulating their conveyance confers.

It is to be remembered, that this line from Carlow to Bagnalstown is a continuation of the main line of the Great Southern and Western Railway Company, with whom the Post-office authorities have already contracted; and it is respectfully urged that the same course which has been taken with the latter may be adopted with respect to this Company, and that the necessary steps, directed by 1 and 2 Vict., c. 98, be taken for fixing the remuneration to be paid to the Company for the ordinary conveyance of mails.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
CADW. WILSON,
Secretary.

Office of Commissioners of Railways, Whitehall,
July 9, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to transmit to you, for the information of the Postmaster-General, the enclosed copy of a letter received this day from the Irish South Eastern Railway Company, and to observe to you, that it does not appear to the Commissioners that the Company contend for a different construction of the law, but claim the consideration of the Post-office under the circumstances of the case.

If the Postmaster-General is of opinion that the law should be enforced, and the Company compelled to comply with the provisions of the Act, the Commissioners will, upon receiving intimation that such is the opinion of the Postmaster-General, take the necessary steps for so doing as provided by the 7 and 8 Vict., c. 15.

Lieut.-Colonel Maberly,
&c. &c.

I have, &c.,
H. D. HARNESS,
Capt. Royal Engineers.

Office of Commissioners of Railways, Whitehall,
July 9, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 6th inst.; to inform you that a copy of it has been transmitted to the Postmaster-General, and to call your attention to the great delay that has taken place in answering their letter of the 21st ult.

The Commissioners are now desirous of knowing without delay whether the Irish South Eastern Railway Company are or are not willing to convey any mail-guard with bags not exceeding the weight of luggage allowed to any other passengers by any trains other than the mail-trains, upon the same conditions as any other passenger.

The Secretary of the
Irish South Eastern Railway Company.

I have, &c.,
H. D. HARNESS,
Capt. Royal Engineers.

SIR,

9, Kildare-street, Dublin, July 13, 1849.

I HAVE the honour to acknowledge the receipt of your letter of the 9th instant, in reference to which a meeting of the Board has been summoned, and I hope to convey to you, on Wednesday next, their reply to the inquiries of the Commissioners of Railways on the subject of the conveyance of a mail-guard with bags.

I have to regret that any delay should occur in answering your communications, but in matters of such importance I cannot act without the instructions of the Directors, and as many of them are at present absent from Dublin, I have been unable to return you as early a reply as otherwise I should have done.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
CADW. WILSON, Secretary.

SIR,

9, Kildare-street, Dublin, July 18, 1849.

REFERRING to my letter of the 13th instant, I am instructed to state, that, in the opinion of the Board, the Act of Parliament requiring the conveyance of a mail-guard with bags in the manner mentioned in your letter of the 9th instant, only applies to cases where a contract for the service of the mails has been previously entered into, and that as this Company have no such contract, they must respectfully decline to convey any mail-guard with bags on the terms required, until such contract has been made, or the provisions of the 1 and 2 Vict., c. 98, put in force.

Capt. Harness, R.E.,
&c. &c.

I have, &c.,
CADW. WILSON, Secretary.

Appendix No. 77.

Irish South Eastern
Railway and
General Post-office.

Appendix No. 77. SIR,

*General Post-office, July 30, 1849.*Irish South Eastern
Railway and
General Post-office

I HAVE submitted to the Postmaster-General your letter of the 9th instant, forwarding a copy of a letter from the South Eastern Railway Company of Ireland addressed to the Commissioners of Railways, from which it appears that the Directors persist in their refusal to comply with the provision of the clause in the Act 7 and 8 Vict., cap. 85.

His Lordship directs me to acquaint you, for the information of the Commissioners of Railways, that the law officers of the Crown in Ireland are of opinion that the construction put upon this clause by his Lordship is correct, and that the Post-office can enforce the conveyance of the mail-guard with the letter-bags at the fare of a second-class passenger. Under these circumstances, I have to request that you will move the Commissioners to take the necessary steps for compelling the Company to comply with the conditions of the Act; and his Lordship directs me to point out that this is the first instance of a refusal on the part of a Company to convey the bags on the prescribed terms, and that, were it passed over, it might lead to the adoption of a similar course by other railway companies.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

W. MABERLY.

*Office of Commissioners of Railways, Whitehall,
July 31, 1849.*

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 30th instant, relative to the refusal of the Irish South Eastern Railway Company to convey the mail-bags and guard, and to acquaint you, for the information of the Postmaster-General, that the Commissioners will instruct the Crown solicitor in Ireland to take the necessary steps to enforce the law, and compel the Company in question to convey the mail and guard in the manner provided by the Act.

I have, &c.,

Lieut.-Colonel Maberly,
General Post-office.

H. D. HARNES,
Capt. Royal Engineers.

APPENDIX No. 78.

RAILWAYS IN AUSTRALIA.

Appendix No. 78.

Railways in
Australia.

GENTLEMEN,

Downing-street, January 11, 1849.

WITH reference to Captain Harness's report of the 3rd June last, relative to the creation of a Railway Company in New South Wales, and the introduction of railways into Australia, I am directed by Earl Grey to transmit to you a copy of a Despatch from the Governor of New South Wales, with a copy of an address of the Legislative Council of that colony, and a Report of a Select Committee of the Council appointed to take into consideration the practicability and expediency of introducing railways into that colony.

I am to request that you will take these papers into your consideration, and favour Lord Grey with your opinion in regard to the mode proposed by the Council, of encouraging and facilitating the construction of railroads, suggesting at the same time any modifications or alterations which you may consider desirable in those proposals.

I have, &c.,

The Commissioners of Railways.

HERMAN MERIVALE.

MY LORD,

Government House, Sydney, July 14, 1848.

I HAVE the honour to transmit a copy of an address presented to me by the Legislative Council of this colony at the close of their recent session, communicating to me certain resolutions adopted by that body, together with a copy of the Report of a Select Committee appointed on the 28th of March last, "to take into consideration the practicability and expediency of introducing railways into this colony."

As I know of no country where the total absence of water communication with the interior, the great difficulty of forming and keeping in repair the ordinary roads, and the consequent expense and delay which are entailed upon the inhabitants of the more remote districts in conveying their various articles of produce to market or for exportation would render the formation of railways more advantageous to its general interests; and as, moreover, I am convinced that a long period must elapse before railways can be introduced into this colony unless material aid is afforded by the Government, I feel justified in recommending the resolutions now transmitted to your Lordship's favourable consideration, with a view to such inducement being held out to any Company that may be formed for this purpose as may appear to your Lordship to be practicable and consistent with general principles.

I have, &c.,

The Right Hon. Earl Grey,
&c. &c.

CHARLES A. FITZROY.

To His Excellency Sir Charles Augustus FitzRoy, Knight Companion of the Royal Hanoverian Guelphic Order, Captain-General and Governor-in-Chief of the territory of New South Wales and its dependencies, and Vice-Admiral of the same, &c., &c., &c.

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MAY IT PLEASE YOUR EXCELLENCY,

WE, Her Majesty's most dutiful and loyal subjects, the members of the Legislative Council of New South Wales in Council assembled, beg respectfully to communicate to your Excellency the following resolutions, adopted by the Council this day, with a copy of the Report of the Select Committee on Railways, and request that your Excellency will be pleased to take the same into your favourable consideration, and also to bring the subject generally under the notice of the Right Honourable the Secretary of State for the Colonies, with the view of obtaining the sanction of Her Majesty's Government to such portions of the recommendations of this Council as cannot be carried into effect by the Colonial Government.

1. That in the opinion of this Council the period has arrived when the formation of railways in the colony ought to be commenced.

2. That to facilitate the speedy formation of a Company for carrying out such a means of transit in districts where the population and internal traffic afford reasonable prospect of success, it is expedient that the Government and the Legislature should hold out some peculiar inducement to encourage such an undertaking.

3. That this Council is of opinion that a grant of Crown land in fee simple ought to be made to any Company incorporated by an Act of this Council, not only of the quantity required along the line for the construction of the railway, but that by way of bonus the Company should also be permitted to make selections of other portions of land, free of charge, to a reasonable extent, similar encouragement having been afforded in the British North American colonies.

4. That, in addition, the Legislature ought to guarantee for a limited term of years the regular payment to the shareholders of a dividend at a rate not exceeding six per cent. per annum upon the first 100,000*l.* of the capital subscribed, security for the same being taken by the Government upon the tolls collected by the Company.

5. That as a large amount of money is lying unemployed, and consequently unproductive, in the savings' bank, the Council is of opinion that a sum not exceeding 30,000*l.* might be advantageously invested by the Government on behalf of that institution, in shares in any such Company.

6. That the foregoing resolutions be communicated to his Excellency the Governor, with a copy of the Report of the Select Committee on Railways, and that his Excellency be respectfully requested to take the same into his favourable consideration; and also to bring the subject generally under the notice of the Right Honourable the Secretary of State for the Colonies with the view of obtaining the sanction of Her Majesty's Government to such portions of the recommendations of this Council as cannot be carried into effect by the Colonial Government.

CHARLES NICHOLSON, *Speaker.*

Legislative Council Chamber, Sydney,
June 15, 1848.

REPORT from the SELECT COMMITTEE ON RAILWAYS, with MINUTES of EVIDENCE.

Extracts from the Votes and Proceedings of the Legislative Council.

Votes No. 3, Tuesday, March 28, 1846.

3. Railways:—Mr. Cowper moved, pursuant to notice, That a Select Committee of seven members be appointed, to take into consideration the practicability and expediency of introducing railways into this colony, with instructions to take evidence, and to report not later than two months from this date.

Debate ensued.

Question put and passed, and the following Committee appointed accordingly:—

Mr. Cowper.	The Colonial Secretary.
Mr. Lamb.	Mr. Murray.
Captain Dumaresq.	Mr. Lord.
Mr. Icely.	

Votes No. 8, Friday, April 7, 1846.

4. Railways:—Mr. Cowper moved, pursuant to notice, That the Despatch of the Right Honourable the Secretary of State for the Colonies, Earl Grey, dated 31st July, 1847, upon the subject of railways, and the petition of the Committee appointed at the public meeting held in Sydney on the 29th January, 1846, to collect information respecting the introduction of railways into this colony, be referred to the Railway Committee.

Question put and passed.

Votes No. 39, Tuesday, June 6, 1848.

4. Railways:—Mr. Cowper, as Chairman, brought up the Report, and laid upon the table the evidence taken before the Select Committee appointed, on the 28th March last, to take into consideration the practicability and expediency of introducing railways into this colony, with instructions to take evidence, and to report not later than two months.
- Ordered to be printed.

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LIST of WITNESSES examined.

William Dawes, Esq., J. P.
Thomas Woore, Esq.
Captain P. P. King, R.N.
Francis Webb Shields, Esq.

Henry Gilbert Smith, Esq.
Richard Wright Goodall, Esq.
William Walker, Esq.
The Rev. Ralph Mansfield.

THE SELECT COMMITTEE of the LEGISLATIVE COUNCIL appointed on the 28th of March, 1848, "to take into consideration the practicability and expediency of introducing Railways into this colony, with instructions to take evidence, and to report not later than two months from this date," have agreed to the following Report:—

YOUR Committee are persuaded that there is no subject that has hitherto been brought under the consideration of your Honourable House that possesses greater, they may, they believe, add equal importance with that which has been referred to them for investigation.

That the introduction of railways into Europe, and other civilized portions of the world, has been attended by a rapid and almost incredible development and increase of all the sources and appliances of national industry, is a fact so universally admitted as to require no argument for its proof. In referring, however, to the condition of those countries where the establishment of railway communication has not only been successful, but has superseded almost every other mode of transit overland for goods and passengers, it would seem that one of the usual, if not necessary, conditions of their application is a certain amount of population and internal traffic. When these elements exist in sufficient amount, the adoption of railways is no longer a problematical experiment. It is only in localities where the population is scanty, and the internal commerce small, that the expediency of attempting the formation of railways can be questioned. It is indeed a fact, not the least instructive as connected with the history of railways, that they tend to create the very means of their support. The traffic on a common road is invariably found to be greatly below that which occurs under the substitution of a railway on the same line. Assuming, however, as your Committee do, the indispensable application of the law of a necessary relation between the population, the traffic, and the cost of a railway, to justify its adoption under any given circumstances, they at once proceed to consider how far the introduction of railways into New South Wales would be sanctioned as a project likely to prove beneficial to those by whose capital it might be formed, or to the colony at large.

The subject is one of such magnitude, and embraces so many details, that the Committee cannot undertake to enter so fully into the question as its importance merits. The shortness of the present Session of Council, irrespective of any other cause, would have precluded the possibility of entering into any more minute or studied investigation than that which your Committee have, during the period of their sitting, been enabled to make. Nor indeed could they have reported upon some points at all, but that their labours had, to a considerable extent, been anticipated, as the Council will perceive from the evidence of Mr. Dawes, by the efforts of a committee of gentlemen appointed at a public meeting of the colonists held in Sydney on the 29th of January, 1846, to collect information upon the subject of the introduction of railways into the colony. After numerous and apparently well ascertained data as to the products, the population, and the existing amount of traffic in those districts through which railway communication, if introduced, offered the best grounds of hope for success, had been thus obtained, it was deemed expedient, in the opinion of the colonists assembled at another public meeting held in the month of August following, that a survey should be made of the line extending between Sydney and Goulburn, and to the Hawkesbury and Nepean rivers, respectively, with the view of ascertaining the physical character of the country through which it would be carried, and of determining the most eligible direction of the route to be followed. In prosecuting this survey the co-operation of the Executive was sought for and obtained. His Excellency the Governor, in a letter from the Honourable the Colonial Secretary, dated 17th September, 1846, was pleased to sanction the payment of a sum not exceeding 500*l.* out of the Land Fund, upon the condition that an equal sum should be raised by private contribution. In consequence of this combined effort on the part of the public and the Executive Government, a careful and elaborate examination of these lines of country has been made; and for a more particular description of the survey your Committee refer to the evidence of Mr. Woore, appended to this Report.

Your Committee now proceed to consider the subject referred to them under the following heads:—

1st. The physical aspect and capabilities of the country in those localities through which it appears probable that railway communication could be immediately introduced with the most reasonable prospect of success.

2nd. The cost of construction,—under which head your Committee would briefly advert to the several plans of railways adapted to locomotive engines, whether constructed of wood with iron plates, or of lines entirely of wooden rails, as suggested in the communication of Mr. Wilkinson, transmitted in the Despatch of the Right Hon. Earl Grey, dated 31st July, 1847.

3rd. The amount of labour at present in the colony available for the purpose.

4th. The probable revenue derivable from any line the projection of which may be justified by its extension through a district combining in the greatest degree the several elements of population, traffic, and the absence of any considerable physical obstacles calculated to enhance the expenses or impede the progress of its construction.

5th. The means by which the capital may be raised and expended in any railway under-

taking, the privileges which the Legislature and Government would be justified in granting, and the conditions and restrictions which it would be expedient to impose in any Act for the regulation of railways generally, or for the incorporation of any particular Company.

Under the first head—*The physical aspect and capabilities of the country in those localities through which railway communication could be immediately introduced with the most reasonable prospect of success*,—it may be observed in limine, that the general experience derived from the history of railways sufficiently establishes the necessity of connecting any projected line with the most populous districts of a country. Lines extending from, or connecting large towns, have invariably been found to be the most successful. In England, the first great line constructed united the towns of Liverpool and Manchester; the second great line brought into connexion London and Birmingham. In the colony of New South Wales, the conditions most favourable to success would appear to belong to a line of which the metropolis should be the terminus, Sydney being the great central mart of the colony. The inhabitants, with those of the district in the immediate vicinity, already number 50,000—and a radius of 140 miles, extending in a westerly and southerly direction, includes more than half of the population of the whole colony. A large portion of the exportable produce of the colony is also derived from the districts with which, in the directions here referred to, the metropolis is brought into connexion. Your Committee do not mean to allege that other districts may not present a favourable field for railway enterprise, as in the neighbourhood of Melbourne and Geelong, and the Valley of the Hunter. Their attention has, however, been directed to ascertain, from the best information at their command, in what particular direction, under all existing circumstances, there was the most reasonable ground for calculating upon the successful introduction of a line of railway which, when completed, might be followed by lines through other districts of the colony. The lines (exclusive of branch lines) extending through the county of Cumberland, as suggested by Mr. Woore, would embrace nearly all the traffic, as well in passengers as goods, from the west, north-west, and southern districts of the colony. The first 24 miles pass through a tract of country extending west through the county of Cumberland to Rope's Creek, and which would form a main trunk line, running towards the great western and southern districts of the colony. From the generally level character of the country, between Sydney and the Nepean and Cowpasture Rivers, few engineering difficulties would occur—the gradients would be easy—would in no instance exceed 1 in 60, and in only six points attain even so steep an ascent as that. In the prolongation of the proposed line by Vermont, and the Oaks, to the gorge in the Mittagong Range, several steep ascents would be encountered. After reaching Mittagong the highest level would be attained, and the extension of the line to Goulburn would, in the opinion of Mr. Woore, be unattended with any serious obstacles. Your Committee do not feel themselves competent to say whether in the intermediate portion of the line, viz.:—that between Vermont and the Mittagong, the route indicated by that gentleman is one which upon, further examination of the country, it may not be deemed expedient to deviate from, or whether if this portion of the line be followed out, the gradients it presents may be practicable for an engine of ordinary locomotive power. But your Committee are of opinion, that by the survey of Mr. Woore an important preliminary proceeding has been accomplished, which proves that the formation of a railway within the county of Cumberland, is of comparatively easy accomplishment, and if the completion of these line of railway could be facilitated by the Government stepping forward to encourage such an undertaking, your Committee would strongly recommend that it should be done, the Government clearly understanding that such aid is not thereby pledged to any future similar undertaking, but that it is given solely with the view of introducing railways into the colony.

The Committee are convinced that in many parts of the British Islands, and in several of the colonies, as well as in the United States, railways have been successfully worked, where the several conditions essential to success, viz., facility and cheapness of construction, population, and internal commerce, exist in a far inferior degree than amongst us. The question of the introduction of railways into Australia, and its assimilation in this respect to more populous countries, can only be regarded as one of time; and the Committee are of opinion, that the period has already arrived when to abstain from taking effective steps for realizing to ourselves the transcendent advantages that belong to this great means of social and national advancement, would be to manifest a supineness and reprehensible indifference to the welfare of the colony.

2nd. *The Cost of Construction.* There are many circumstances which are calculated to render the cost of construction of railways in Australia much less than that incurred for similar works in Europe. Two-thirds of the country through which any extended line of railway might be carried would consist of Crown land, and your Committee are clearly of opinion that so great an increased value will be given to the waste lands of the colony by the establishment of railways, that the Imperial Government would be bound, by every principle of expediency, as well as justice, not only to make a free grant of all lands required for the actual construction of the line, but also to sanction the reservation to the Company, without charge, of additional portions of land at the several termini, equal in extent to those which, under similar circumstances, have been so appropriated in Canada, and which your Committee perceive by the Lords Colonization Report (July 1847), amount, in the aggregate, to 20,000 acres. Your Committee do not disguise from themselves the fact that any Company which may be established will have difficulties of no ordinary kind to encounter, and that any inducement which the Crown can fairly hold out ought not to be withheld. In the despatch of Earl Grey to his Excellency the Governor, dated 26th February 1847, his Lordship observes that he is "fully sensible of the very great advantage which would result from the construction of railroads in the Australian colonies, and that, in order to obtain this advantage at an earlier period than would otherwise be possible, it might be greatly for the public

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interest to encourage the promoters of such undertakings, by allowing them to share in the increased value which would be given to the lands through which the lines would pass." While your Committee rejoice to perceive the recognition of such a principle by so high an authority, they cannot admit that the suggestion of the Land and Emigration Commissioners permit a Company to purchase land, literally valueless, at the minimum upset price of 1*l.* per acre, can be regarded as any boon, but that the only way by which the spirit of Earl Grey's despatch can be carried out, is by adopting the principle sanctioned by the precedent of Canada. They are sanguine that lands, the property of private individuals, might, except in the immediate proximity to Sydney, or where extensive improvements have been effected, be acquired at a comparatively small sum; because, as in the case of Crown lands, the increased value given to such property, by its being brought into connexion with a railway, would, in the case of rural lands, afford an equivalent for such part as might be appropriated for the purpose of constructing the line. And in the opinion of the Committee it ought to be a condition in all cases where private property has to be surrendered for a great public object of this kind, that the advantage accruing to the proprietor in the increased value given to any adjacent property he may possess, should be taken into account. With such a provision as this, the expense of purchasing land, which constitutes so enormous a charge in all undertakings of a similar kind in England, would be a comparatively insignificant item.

The indigenous timber of the colony would be found, there can be no doubt, unequalled, whether employed as sleepers for the rails, or used as piles in substitution for embankments, according to the plan already extensively followed in America, and recommended to the notice of this Government by the Right Honourable the Secretary of State for the Colonies, in another despatch, dated 31st July 1847, already noticed, in which his Lordship points out to his Excellency the Governor the great importance of "establishing such means of communication, at the earliest possible period, within the colony under his Government." The system of dispensing with earthen embankments, excavations, and solid masonry, by means of timber foundations, is peculiarly recommended to the notice of the colony, as well by its economy as by the fact, that some of our native woods—such as the iron bark—are superior to any in the world in their applicability to this purpose. In America, where the pine is used, it is an indispensable preliminary to the preservation of the wood that it should be subjected to an expensive chemical process, that of Kyanizing. The natural hardness and indestructibility of the iron-bark timber would, it may be safely predicated, render any such precaution with respect to it unnecessary. That timber may be employed as sleepers, and as a substitute for earthen embankments, rests upon no hypothetical statement. Railways constructed upon such a principle have been long in use in America, and the cost attending the construction of them has not exceeded, in some instances, 2,000*l.* a-mile. From all the information your Committee have been able to collect, they believe that a railway might be constructed from Sydney to the Cowpasture River on the south, and the Nepean or Hawkesbury River on the west or north-west, at a rate not exceeding this cost, provided the plan adopted be that of wooden rails only, upon the principle suggested by Mr. Wilkinson of the Surveyor-General's Department, New Brunswick; but if it should be considered desirable to complete that portion within the neighbourhood of Sydney, as suggested by Mr. Shields, they consider it may be done at a cost per mile not exceeding double that amount. Such a line to present gradients practicable for an ordinary locomotive engine, and embracing all the essential improvements which have recently been applied in railway transit at home. Your Committee, guided by the estimate of Mr. Woore, and influenced also by the evidence of Mr. Shields, and the communication of Mr. Wilkinson, do not hesitate to express their belief, that a railway, answering all the purposes at present desired, may be completed within the limits of the county of Cumberland for 120,000*l.*, the line proposed being about 50 miles, viz., 40 miles to the Cowpasture River, and 10½ miles to Penrith, or 15 miles to Windsor, whichever may be finally resolved upon as the best point for carrying on the railway to meet the Bathurst traffic. Whatever difference of opinion may exist respecting the principle upon which railways should be constructed within the vicinity of the metropolis, your Committee believe that a perfect unanimity of sentiment prevails, as regards this question, with reference to the line of road extending further into the interior; and your Committee are of opinion that, to ensure the speedy commencement of railways which would give to the colonists a proof of their advantages, the more simple the construction upon which they are commenced the better. Wooden rails would, they are persuaded, ensure all the advantages that would be sought for for some time to come; and as any line becomes distant from the metropolis, the requirement of rapid conveyance is less urgent, and the creation of means by which travelling at the rate of 12 or 15 miles an hour may be effected, will be of itself an immense improvement upon the mode of transit, both for passengers and traffic, now existing.

3rd. *The Labour available for the purpose.* It has been a subject of apprehension not altogether unwarranted, with many persons otherwise willing to promote the establishment of railways, that the construction of the works would absorb so much of the available labour of the colony as materially to injure the settlers in the country. This objection, however, your Committee conceive was never an insuperable one, and under the favourable prospects now presented of the continuance of immigration, it is not any longer worthy of consideration. The evidence they have taken proves that there is always a considerable population of labouring men in Sydney who, in consequence of their having large families, and from other circumstances, are either unable or unwilling to take employment in the interior, but who prefer remaining in the city and its vicinity, suffering comparative misery and want, rather than accept advantageous offers as shepherds or agricultural labourers. On this account, while labour has been scarce in the interior, the Sydney Corporation have never experienced any difficulty in obtaining a supply of men for the repair of the city streets. If, moreover,

wooden piles and tressels be employed in the construction of the line, the class of persons employed will consist, to a great extent, of mechanics, such as carpenters, joiners, and sawyers, and not of the class from which country servants are usually taken. But even under all circumstances, the aggregate number of men employed on such a line as that suggested would be inconsiderable compared with the existing amount of labour in Sydney, and the prospect now afforded, by recent intelligence from England, of a considerable augmentation of the labouring class from immigration during the next few years. From the calculations of Mr. Woore and Mr. Shields, your Committee conceive that even if only 300 men could be employed upon this undertaking, very satisfactory progress would be made; but should any Company which may be established feel authorized to employ 500 men, your Committee believe that even this number would not now derange the labour market of the interior, but that the works would afford the means of giving immediate employment to newly arrived immigrants, without the absorption of this labour causing any material augmentation in the general rate of wages in the rural districts.

4th. *The probable revenue likely to be derived from any Railway constructed with especial reference to population, traffic, and the absence of any serious physical impediment.*—Your Committee think that it is a duty on the part of the Legislature to satisfy itself as to the reasonable prospect of any railway project being likely to prove remunerative to those investing their capital in it, before giving to it any legislative sanction. In this colony such a precaution is perhaps more necessary than elsewhere; but for reasons which will be presently alleged, the duty becomes more imperative. The committee are of opinion, after mature deliberation, that the project of a railway ought, if necessary, with a view of ensuring its success, to be encouraged by the Government, providing, either directly or indirectly, a portion of the capital and offering to guarantee a fixed rate of interest on the shares, for a limited term of years. The question of the return likely to accrue from the adoption of any scheme must therefore be maturely weighed before it can be entitled to either notice or encouragement; but judging from the evidence which is appended to this Report, and the opinions expressed by the highly intelligent witnesses whom they examined, they feel assured that not only would a railway be remunerative, if established within the county of Cumberland, but that it would very probably make a moderate return upon lines extended further into the interior.

5th. *The means by which the capital may be raised.*—That an amount of unemployed capital exists in the colony sufficient for an undertaking of even much greater magnitude than that which engages the consideration of the Committee is beyond all dispute. On the 31st December, 1847, the amount of deposits in the several colonial banks was 1,200,000*l.* The introduction, nevertheless, of railways into the colony is an experiment novel in its character, and it appears to your Committee not improbable that from the want of knowledge in those who have never witnessed the application of railways in Europe, or from the misgivings which may be entertained as to their immediate applicability to this colony, the scheme, if left entirely unaided in the hands of a public Company, might fail. Many persons would willingly invest their capital if assured of the receipt of a moderate dividend for a given number of years, and the Committee believe that very great inducement would be afforded to capitalists to enter into the formation of a Company, if a dividend at a rate not exceeding six per cent. per annum were guaranteed to the shareholders on their paid-up capital. The Committee would propose that this guarantee should for the present be limited to the first 100,000*l.* paid up, making the general revenue liable to an annual charge of 6,000*l.* for 10 years from the opening of the line; though your Committee believe if the Company be managed economically, and the works carefully executed, the fulfilment of the guarantee will not be required. As security for this engagement the Committee recommend that in the Act of Incorporation, all the profits of the company, after the payment of the current expenses, should be mortgaged to the Government. A contribution of 6,000*l.* per annum for three years having been pledged by the colony in aid of steam communication between it and England, the extension of encouragement upon a similar principle, to a kindred, and not less important object—that of railways—needs no justification.

In the event of any Company being established upon conditions assented to by the Government and Legislature, your Committee also recommend that a portion of the funds belonging to the savings bank, and which at present are unproductive of any interest to the depositors, should be invested in the purchase of shares, say to the amount of one-fourth the sum required for completing the proposed lines within the county of Cumberland, or about 30,000*l.*, the Government reserving to itself the right of nominating such a number of Directors as would represent the proportion of the sum invested on account of the savings' bank, to the whole capital of the Company.

With respect to any legislative Act which may be required, your Committee recommend that the general principles which have been embodied by Parliament in the various Acts passed from time to time, especially that of the Act 8 and 9 Vict., c. 20, should be adhered to, so far as they may be applicable to the peculiar circumstances of the colony.

In conclusion the Committee would repeat, that the encouragement sought for at the hands of the Legislature, and without the concession of which they are apprehensive that the introduction of railways into the colony may be indefinitely postponed—is one justified upon grounds of general expediency, as well as sanctioned by the example of other colonies. The countenance that it would be desirable to afford a well-matured scheme would not only be beneficial to the proprietors specially, but to the colony generally. In New South Wales any railway that may be projected must necessarily traverse through the greater part of its course the waste lands belonging to the Crown. These lands, now wholly unsaleable, would, by their proximity to the line, acquire an immediate and marketable value; and the maintenance of public roads—a constantly recurring annual charge on the general revenue—would be saved.

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The present condition of many of the great lines of traffic in the colony is such that, in seasons of drought, or after a continuance of wet weather, they are rendered impassable. To put these roads in a condition equal to the requirements of the country by levelling, macadamizing, and the erection of bridges, would, there can be little doubt, entail upon the colony a cost equal to what would be incurred in the construction of a railway upon the economical principles followed in America. Lastly—A great and increasing stimulus would be given to all the springs of private industry and enterprise, by presenting to them the means of rapid transit, which propulsion by railway can alone afford. New articles of export would be produced, occasioning an increase to our revenue and trade; new fields of occupation would be opened to the emigrant; lands at present lying waste, from their inaccessibility, would find purchasers. These, and numberless other advantages, the magnitude and importance of which it is impossible to exaggerate, whether regarded in connexion with the social, the commercial, or the political interests of the colony, must ensue from the introduction of railways; to encourage and regulate which, by a wise and liberal course of legislation, is not only the interest but the duty of the Government and the Legislature.

Legislative Council Chamber,
Sydney, 6th June, 1848.

CHARLES COWPER,
Chairman.

MONDAY, April 3, 1848.

Present:—

CHARLES COWPER, Esq., in the Chair.

Thomas Icely, Esq.
John Lamb, Esq.

Francis Lord, Esq.

William Dawes, Esq., J. P., called in and examined.

1. You are secretary to the Committee appointed to collect information relative to the introduction of railways into New South Wales?—Yes.
2. You were, I believe, requested to act as Secretary to the Committee which was appointed at a public meeting held on the 29th of January, 1846?—I was.
3. Can you state the names of the members of the Committee appointed at that meeting?—Yes; the following gentlemen are those:—

The Mayor of Sydney.

John Walker, Esq.
G. K. Mann, Esq.
Edward Cox, Esq.
W. Dawes, Esq.
M. C. O'Connell, Esq.
W. S. Deloitte, Esq.
C. D. Riddell, Esq.
F. W. Unwin, Esq.
W. F. De Salis, Esq.
Edward Knox, Esq.

Walter Scott, Esq.
Charles Cowper, Esq.
Wm. Lawson, Esq.
A. W. Mickle, Esq.
W. Walker, Esq.
Jas. Macarthur, Esq.
W. C. Wentworth, Esq.
Hy. G. Smith, Esq.
Jas. Raymond, Esq.

G. C. Turner, Esq.
C. Nicholson, Esq.
W. Lithgow, Esq.
Rev. R. Mansfield.
T. W. Smart, Esq.
Campbell Brown, Esq.
J. Dobie, Esq.
J. Rankin, Esq.
Mr. S. Lyons.

4. The Committee appointed a Sub-committee?—Yes; and this Sub-committee forwarded circulars to various parties, particularly to the southern country, towards Goulburn and Berrima, to obtain information. I beg to hand in a copy of the circular addressed by that Committee to gentlemen in different districts of the interior, requesting local information from them on the subject of railroads, and the traffic between those districts and Sydney. [*Witness handed in the same. Vide Appendix A.*]

5. Did your Committee report subsequently to another meeting of the colonists?—Yes, on the 6th August, the Committee made their report at a public meeting, called by advertisement for that purpose, and which is contained in the "Sydney Morning Herald," of 7th August, 1846, which I beg to hand in. [*Witness handed in the same. Vide Appendix B.*]

6. What subsequent proceedings were adopted?—The following resolution was passed at the public meeting held on the 6th August, 1846:—"That a Provisional Committee, consisting of the undermentioned gentlemen, be now appointed for the purpose of collecting subscriptions for a survey, and causing such survey to be made whenever they shall deem the amount subscribed sufficient to meet the necessary expense, and that they do report to a public meeting to be hereafter held; the Honourable Charles Nicholson, Esq., Speaker of the Legislative Council; the Mayor, James Macarthur, Esq.; Rev. R. Mansfield; Thomas Barker, Esq.; W. Walker, Esq.; W. Lithgow, Esq., M. L. C.; Samuel Lyons, Esq.; F. Unwin, Esq.; Charles Cowper, Esq., M. L. C.; D. J. Coghill, Esq.; Major Lockyer; Capt. O'Connell, M. L. C.; R. M. Robey, Esq.; H. G. Smith, Esq.; William Dawes, Esq., Honorary Secretary."

7. Can you state the amount of subscriptions collected from the public?—Yes, 352*l.* has been paid; I hope to collect 500*l.*, so as to be in a position to claim a like sum from the Government.

8. Did you make any application to the Government for assistance in the promotion of this object?—Yes; a letter was written to the Colonial Secretary, of which I hand in a copy, together with his answer. [*Witness handed in the same. Vide Appendix C.*]

9. What were the steps adopted by the Committee to procure the survey?—Tenders were

advertised for, for a survey, and a number of tenders were sent in, but there were none that the Committee could at all entertain, excepting that of Mr. Woore, as they had not sufficient funds to meet the terms demanded by the different surveyors. Mr. Woore, however, undertook to make the survey, and to take the chance of getting his expenses paid.

10. Has Mr. Woore completed the survey which he undertook to make?—He has, and sent in his plans, which are now in my charge.

11. We see by the Report of the 6th August, that Sub-committees were also appointed for the western and northern lines, as well as for the southern route; have these Sub-committees ever reported?—The two former have not; the Sub-committee's Report on the southern line I beg to hand in; it is dated the 26th March, 1846. [*The Witness handed in the same. Vide Appendix D.*]

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APPENDIX (A.)

SIR,

Sydney, February 10, 1846.

THE Provisional Committee appointed by the public meeting, held in Sydney on the 29th ultimo, to collect information relating to the introduction of railways into this colony, request the favour of your stating, to the best of your judgment, what is the present extent of the traffic between and Sydney.

If willing thus to assist the Committee, I am to beg that you will be good enough to insert in the subjoined columns the quantities of the several articles that you think now pass along the road in the course of twelve months, and the present rates paid for their carriage, and also the probable number of persons who travel between the two places, and of those who travel between either of them and intermediate places, during the same period; and any other particulars which you may deem worth communicating.

You will please return this sheet to me, re-folding it with my printed address outside; and the Committee would be much obliged by your doing so at your earliest convenience.

I have, &c.,

WILLIAM DAWES, *Honorary Secretary.*

To

Estimate of the present traffic between

and Sydney.

—	Probable Quantities in 12 Months.	Present Rates of Charge for Carriage.	REMARKS.
Wool	bales	per ton	
Tallow	tons	"	
Hides	"	"	
Meat of all kinds	"	"	
Sheep	head	per head	
Horned Cattle	"	"	
Horses	"	"	
Pigs.	"	"	
Horns and Bones	tons	per ton	
Grain of all kinds	busbels	per bushel	
Hay	tons	per ton	
Dairy Produce	"	"	
Timber	hundreds	per hundred	
Firewood	loads	per load	
Marble and Lime	tons	per ton	
Fruit and Sundries	"	"	
Return Goods (supplies)	"	"	
Passengers to and from	persons	each	
Passengers to and from } intermediate places . }	"	"	

I think the above is an approximation to the truth.

Please to affix your signature.

APPENDIX (B.)

RAILWAYS.

THE Provisional Committee, appointed by the public meeting held in Sydney on the 29th January, 1846, to collect information relative to the introduction of railways into New South Wales, beg to present to the public meeting called this day the following—

Report.

At the second meeting held by your Committee, on the 6th February, a Sub-committee was appointed, consisting of Dr. Nicholson, Major Christie, Messrs. Smith, Campbell, and Mansfield, to collect detailed information on the extent of traffic between Sydney and such parts of the interior as might be deemed eligible for the introduction of railways.

It appearing to this Sub-committee, at their first meeting, that an inquiry into the traffic between Sydney and the northern, western, and southern parts of the colony, would be too wide and laborious

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to be instituted by a single Sub-committee, they resolved on confining their own attention to what they deemed the most important line of the three—namely, that between Sydney and Goulburn.

Respecting the great southern line, the Sub-committee, therefore, proceeded to collect all the information within their reach as to the probable number of persons and quantities of produce and merchandise now passing up and down in the course of a year.

Their Report, dated March 26, was brought up on the 1st May, and being unanimously approved and adopted by that meeting of your Committee, was published in the "Sydney Morning Herald" of the following day for general information; and it will be seen that the Sub-committee, having inquired into the expense of forming railways in various countries, and having been informed by several civil engineers that on the Goulburn line there are no serious engineering difficulties, the greater part of it being indeed of very easy construction, are of opinion that the cost would not exceed 6,000*l.* per mile, making the required capital about 750,000*l.* The estimates of the present traffic in goods and passengers, as collected from the replies to the circulars addressed by them to various gentlemen having property on the proposed route, and beyond it, give an aggregate of 66,542*l.* per annum; and assuming that by the time the railway could be brought into complete operation the revenue would have been increased to 100,000*l.* per annum, and that the cost of working would be 40 per cent. of the income, the Sub-committee show a net profit for the first year of 60,000*l.*, or at the rate of eight per cent. on the capital.

In adopting this Report, as already stated, your Committee of course expressed their acquiescence in the substantial accuracy of its conclusions; but from the information which has subsequently reached them, they are inclined to think that the estimate of 6,000*l.* per mile for the construction of the line would be found considerably too high. They have reason to believe that wooden rails would be found to answer every purpose, and that wooden bridges and viaducts might be advantageously adopted; and it is unnecessary to observe, that in a country where timber of the best description for railways is so abundant as in New South Wales, this deviation from the English method would effect a very large saving.

At the meeting held by your Committee on the 1st of May, when it was found that the original Sub-committee had, for the reason above mentioned, declined entering into the consideration of the northern and western lines, your Committee appointed two other Sub-committees—one for the northern, and the other for the western parts of the colony.

Neither of them has, however, as yet brought up a Report. The gentlemen more immediately interested in the northern districts seem inclined to conduct the inquiry on their own separate account; whilst it is publicly known that the consideration of the Windsor and Bathurst lines has been taken up by the residents in those localities.

Your Committee have much pleasure in reporting, that a preliminary survey of the southern route between Sydney and Goulburn, and of the western between Sydney and the Hawkesbury and Nepean, has been voluntarily made by Mr. Thomas Woore, who has prepared an elaborate map and report both of which will be now laid before you.

By the route proposed by Mr. Woore, Sydney would be connected with Parramatta, Windsor, Penrith, the Cowpasture district, and Goulburn, by lines not exceeding in the aggregate 154½ miles (the distance between Sydney and Goulburn being 122 miles,) whilst the range of country which would thus be brought within the operation of the railway contains a population of 112,000; and if the Port Phillip district may be considered as coming eventually within its scope, the number of persons would be no less than 142,000, out of a total population of 188,000.

Under the present circumstances of this country, however, the passenger-traffic would not be so productive of revenue as that of merchandise and colonial produce.

This is borne out by the estimates of the Sub-committee, which give for the annual return from goods an amount exceeding that from passengers by nearly one hundred per cent.

It will be obvious to this meeting that no decided steps can be taken toward the formation of railways until an accurate survey shall have been made of the proposed lines; and your Committee would therefore recommend that public subscriptions should be entered into for the liquidation of the expenses which such a survey would render unavoidable.

They would also recommend that a deputation should be appointed to wait upon His Excellency the Governor, with the view of ascertaining to what extent the Government would be disposed to assist in the great undertaking of introducing railways into this colony.

Of the vast importance of such an undertaking to the Government as well as to the colonists, and in some sense to the mother-country as well as to New South Wales, it would, indeed, be superfluous for your Committee to speak at any length. In developing the resources of the colony, and multiplying its facilities for the production of wealth, railways would of course subserve the interests of the colonial treasury, and extend our commercial intercourse with Great Britain.

It is therefore not too much to expect, that with reference to its own financial policy, independently of the higher considerations of the social and moral advantages which this important portion of Her Majesty's dominions could not fail to derive from the introduction of railways, the Government should look upon this enterprise with a favourable eye, and extend to its conductors whatever assistance they can reasonably desire.

Your Committee have thus endeavoured to discharge the duty intrusted to them by their fellow-colonists. And in concluding their Report, they would beg to assure this meeting, that the more they have examined this great question, the more reason have they seen for entertaining the conviction, that the construction of railways in New South Wales would require but a comparatively small outlay, and that, on the line to which their attention has been chiefly directed, the returns would yield a liberal and a progressively increasing profit on the capital invested.

Sydney, August 6, 1846.

CHARLES NICHOLSON, *Chairman.*

APPENDIX (C.)

RAILWAY SURVEYS.

SIR,

Sydney, August 19, 1846.

IN the interview with which, on the 10th instant, His Excellency the Governor was pleased to honour the deputation appointed by the public meeting held on the 6th, to wait upon His Excellency

for the purpose of ascertaining to what extent the Government would be disposed to assist in the introduction of railways into this colony, His Excellency expressed a wish that the views of the deputation should be communicated to him in writing.

I therefore do myself the honour, as chairman of the deputation, to submit to His Excellency the following observations:—

1. It being enacted by the statute 5 and 6 Victoria, c. 36, that, subject to the exceptions therein provided, the proceeds of the sales of the waste lands of the Crown in the Australian colonies shall be appropriated and applied to the public service of the said colonies respectively, the deputation have been led to think, for the reasons hereinafter stated, that certain lines of railway would conduce so essentially to the public service as to come within the reasonable meaning of the enactment, and would therefore be entitled to assistance out of the territorial revenue.

2. The lines referred to are the main trunks of communication between the metropolis and the southern, western, and northern parts of the colony respectively.

3. The establishment of railways on these lines, whilst it could not fail to confer immense advantages on the colony at large, would at the same time be the means of enhancing the value and promoting the sale of the waste lands of the Crown, and of thereby affording an ample return for any sums of money advanced out of the Land Fund in aid of their formation.

4. The importance of railways to the general interests of the colony must be obvious to all who are aware of the following facts:—

1. That nearly the whole of our exportable commodities are produced in distant parts of the interior.

2. That, with exceptions scarcely worth mentioning, the colony is destitute of navigable rivers.

3. That the existing roads and bridges are in a state of great and increasing dilapidation.

4. That in those seasons of drought to which the colony is periodically subject, even the best of roads would be insufficient for the required traffic, the want of food and water for teams of drawing cattle, and for live stock driven for slaughter, involving an extent of delay and loss most detrimental both to producers and to consumers, many of the animals perishing on the journey, and the stock brought to market being lamentably deteriorated by privation and fatigue.

5. That the cost of constructing and maintaining economical railways would not, in this country, very far exceed that of Macadamised roads.

5. The assistance at present sought from the Government applies only to the survey of lines, there being reason to believe that until the nature of the engineering difficulties shall have been clearly ascertained and defined, capitalists could not be induced to embark in the proposed undertaking.

6. It was under this conviction that the public meeting resolved on a subscription towards meeting the expenses of a survey of the lines deemed to be of the most immediate importance—namely, those connecting Sydney with Goulburn, and with the Hawkesbury and Nepean rivers.

7. Such subscription has been accordingly commenced, and the deputation would respectfully request that His Excellency would be pleased, in conformity with a practice which, with reference to various other objects, has been observed by the colonial Government for a series of years, to sanction the appropriation out of the public funds, for this purpose, of a sum of money equal to that to which the subscription shall hereafter be shown to have amounted.

I do myself the honour to enclose herewith, for His Excellency's information, the under-mentioned documents; and the provisional Committee appointed by the public meeting above referred to, have desired me to add, that they shall be most happy to furnish any further particulars which His Excellency may require, so far as their past or future inquiries may enable them to do so.

I have, &c.,

The Honourable the Colonial Secretary.

CHARLES NICHOLSON.

ENCLOSURES.

No. 1. Report of the Sub-committee appointed to collect information on the extent of traffic; dated 26th March, 1846.

No. 2. Report of the provisional Committee to the public meeting held on the 6th August, 1846.

No. 3. Summary of the Report presented to the said public meeting by Mr. Thomas Woore.

*Colonial Secretary's Office,
Sydney, September 17, 1846.*

SIR,

I do myself the honour to inform you, that the Governor has laid before the executive council your letter of the 19th ultimo, as chairman of the deputation which waited upon His Excellency on the 10th August last, for the purpose of ascertaining to what extent the Government would be disposed to assist in the introduction of railways into the colony.

The assistance asked for in your communication is an appropriation, out of the public funds, of a sum of money equal to the amount raised by private subscription, for the purpose of surveying the lines connecting Sydney with Goulburn, and with the Hawkesbury and Nepean rivers; and I am directed to state to you, that the Council were of opinion that the object in question was one towards the carrying out of which pecuniary assistance might be granted out of the Crown Land Revenue, under the authority of the Land Sales Act, 5 and 6 Victoria, c. 36.

The Council, however, were not prepared to recommend that the Government should, in this instance, pledge itself to the payment of any larger sum than five hundred pounds; but subject to this limitation, they advised that there should be granted, out of the Crown Land Revenue, a sum equal to the amount raised by private contributions, for the purpose of surveying the lines mentioned in your letter. The council also expressed their opinion that the disposal of the money so granted should be left to the parties interested, on condition that proper vouchers be rendered by them to show that both the amount raised by subscription and the corresponding amount contributed by the Government have been duly expended on the object proposed.

I am further directed to inform you, that His Excellency has much pleasure in approving the recommendation of the Council, and that instructions will be given for the issue of the money as soon as the arrangements of the Railway Committee are sufficiently advanced to require it.

I have, &c.,

Charles Nicholson, Esq., Chairman, &c.

E. DEAS THOMSON.

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RAILWAYS IN NEW SOUTH WALES.

*Ordered by the General Committee to be Printed for the use of their own Members exclusively,
3rd April, 1846.*

The Sub-committee appointed by the General Committee, on the 6th February, 1846, to collect detailed information on the extent of traffic between Sydney and such parts of the interior as might be deemed eligible for railways, have agreed to the following

Report.

The first matter which engaged our attention was to decide upon a line of road having the greatest traffic, free from the competition of water communication, and opening the most fertile and populous district. With these objects in view, Goulburn appeared to us to present the most eligible terminus, and it is therefore to the southern line of road that this Report alludes, without intending, however, in the slightest degree, to insinuate that this line alone possesses the requisites for profitable railway investment.

The next point to determine was, whether the route to Goulburn presented any serious engineering difficulties? Several professional gentlemen, civil engineers, including Messrs. Mann, Knapp, Galloway, and Burrows, kindly attended to give the requisite information.

Although these gentlemen are not practically acquainted with the formation of railways, their evidence was unanimous that *no particular obstacles exist*, and that the greater part of the line would be of very easy construction.

Of course, nothing but an actual survey can determine the cost. We have, however, examined into the expense of railways in various countries. The most costly are those of England, averaging 23,000*l.* per mile, and those of France, averaging 18,000*l.* per mile. The cheapest are those of Germany, averaging 7,000*l.* per mile, and of the United States of America, averaging 4,800*l.* per mile. Some contracts have, we believe, been recently made in England at 4,000*l.* and at 5,000*l.* per mile.

Therefore, knowing that we have few bridges to build, no land to purchase (or very little), no expensive and ornamental stations to construct, and all the materials (*rails* only excepted) already on the line proposed, and looking to the fact that we shall enjoy the benefit of the large experience of others in the construction of railways, we think that an estimate of 6,000*l.* per mile would be found sufficient for the line between Sydney and Goulburn, thus making the capital necessary about 750,000*l.*

For the purpose of ascertaining the extent of the existing traffic on the line, we addressed circular letters to various gentlemen who have property on the proposed route and beyond it. To these gentlemen, principally, we are indebted for the information from which we have compiled the subjoined estimate, and we are happy to say that they almost unanimously encourage the project. [For estimate, see *Appendix*.]

The amounts of 42,242*l.* for goods, and 24,300*l.* for passengers, embrace the *present* traffic only. That it would be much increased by the introduction of railways the history of those undertakings is sufficient to show.* It is possible, indeed, that some of the articles enumerated in the estimate, such as cattle, horses, and sheep, would not pay a railway for conveyance at so low a rate of carriage as that calculated; and, in such case, the present method of driving them to market would probably be continued. It is certain, however, that even at treble the rates now paid, the railway would secure a large portion of the traffic in live stock. On the other hand, the quantities of wool, tallow, hides, return supplies, &c., would be greatly augmented by the time a railway could be opened—say not less than three years from the present time.

In grain, hay, and dairy produce, a large trade would be called into life; whilst marble, lime, timber, ore, and other articles, would, in the course of a short time, form a considerable portion of the traffic on the line. Coals are said to exist in the neighbourhood of Goulburn, and in other places on the route.

With reference to these facts, we are of opinion that 100,000*l.* may be safely estimated as the amount of receipts during the first year of the working of the entire line. Taking the costs of working at 40 per cent. of the revenue, there is left, for the first year, a net profit of 60,000*l.*, or, at the rate of 8 per cent., on a capital of 750,000*l.*, with the favourable prospect of a greatly increased return.

We have not, of course, been able to ascertain what would be the *exact length* of a railway to Goulburn, but are informed that a considerably shorter track than the present road (125 miles) may be taken.

Our attention has been particularly called to the subject of the *labour* necessary for the construction of so important a work; and we recommend, as materially advantageous to any Company that may be formed, as well as to the present employers of labour in the colony, that a sufficiency of labourers should be imported expressly for the purpose.

In submitting this Report, we must admit that in many points our estimate may prove incorrect. We have endeavoured, however, to collect the most accurate results from the materials supplied to us; and we believe our conclusions to be a near approximation to the truth. The census which has just been taken, and the next official returns of stock and farm produce, will afford much valuable information which we are now unable to lay before you.

We need not dilate on the great advantages which the colony would derive from railway communication. The country being almost destitute of navigable rivers, and the roads often impassable, all the traffic would be secured by railways, and would by their means be greatly augmented.

* For example, with respect to the Stockton and Darlington Railway, in England, which was intended chiefly for the carriage of coal, the prospective estimate was, that the quantity of coal which would pass along the line annually would be, for home consumption, 80,000 tons, and for exportation 10,000. The quantities actually carried, after the establishment of the railway, were, for home consumption, 180,000 tons, or 125 per cent. more than the estimate; and for exportation, 560,000 tons, or 5,500 per cent. more than the estimate.

So in the United States. Before the Eastern Railway was constructed, the number of passengers from Lynn was estimated at 4,000 annually; it proved to be, by the railway, no less than 70,000, an excess of 1,750 per cent. Before the introduction of the Lowell Railway, a careful and laborious estimate made its yearly income 35,000 dollars; the actual income proved to be 267,500 dollars, an excess of more than 660 per cent.

The country around Sydney, for a circle of many miles, being for the most part barren and useless, some safe and speedy mode of transit to the more fertile districts of the interior is absolutely necessary for developing the resources and securing the advancement of the colony.

With these facts before us, therefore, we hesitate not to express our conviction that the time has now arrived when railways would be a source of profitable investment in this colony, and we doubt not a portion of the capital would be subscribed by the colonists.

We beg to subjoin in the Appendix such extracts from the written communications received in reply to our circular letter as appear to us to have an important bearing upon the subject of our inquiry.*

Sydney, March 26, 1846.

R. MANSFIELD, *Chairman.*

ESTIMATE of present TRAFFIC in GOODS between SYDNEY and GOULBURN.

Description of Goods.	Place.	Quantities per Annum.	Rate of Carriage.	Amount per Annum.		
				£.	s.	d.
Wool	Goulburn.	13,000 lbs. = 1,650 tons	80s. per ton . .	6,600	0	0
	Other places on the route .	2,000 lbs. = 250 tons .	40s. ,, . .	500	0	0
Tallow.	Goulburn.	1,000 tons	60s. ,, . .	3,000	0	0
	Other places	150 ,,	30s. ,, . .	225	0	0
Hides	Goulburn.	375 ,,	60s. ,, . .	1,125	0	0
	Other places	70 ,,	30s. ,, . .	105	0	0
Grain	Goulburn.	7,000 bushels	1s. 3d. per bushel.	437	0	0
	Other places	30,000 ,,	9d. ,, . .	1,125	0	0
Hay	Goulburn.	Nil				
	Other places	2,500 tons	20s. per ton . .	2,500	0	0
Dairy Produce .	Goulburn and other places .	150 ,,	30s. ,, . .	225	0	0
Return Supplies {	Goulburn.	4,000 ,,	75s. ,, . .	15,000	0	0
	Other places	2,000 ,,	30s. ,, . .	3,000	0	0
Sheep	Goulburn.	70,000 head	6d. per head . .	1,750	0	0
	Other places	30,000 ,,	4d. ,, . .	500	0	0
Cattle	Goulburn.	20,000 ,,	5s. ,, . .	5,000	0	0
	Other places	6,000 ,,	3s. ,, . .	900	0	0
Horses	Goulburn and other places .	1,000 ,,	5s. ,, . .	250	0	0
Total				42,242	0	0
Add passenger traffic, as per annexed estimate . . .				24,300	0	0
Total amount of present traffic.				66,542	0	0

ESTIMATE of present PASSENGER TRAFFIC between SYDNEY and GOULBURN, and intermediate places.

PLACE.	Number of Passengers Annually.	Rate per Head.	Amount per Annum.		
			£.	s.	d.
Goulburn, to and from	10,000	30 0	15,000	0	0
Berrima ,,	2,000	20 0	2,000	0	0
Appin ,,	1,000	8 0	400	0	0
Campbell Town ,,	10,000	6 0	3,000	0	0
Liverpool ,,	6,000	4 0	1,200	0	0
Places nearer Sydney than Liverpool . . .	4,000	2 6	500	0	0
Trips between the various stations on the line .	4,000	6 0	1,200	0	0
Conveyance of mails . . . . .	..	..	1,000	0	0
Total			24,300	0	0
Add traffic in goods, as in per annexed estimate . .			42,242	0	0
Total Amount of present traffic.			66,542	0	0

NOTE.—The above rates are the fares now charged. As passengers would be freed from road-side expenses, even higher rates would command all the traffic; and third-class carriages, at low rates, would bring a large income from those persons who now travel on foot in search of employment.

WEDNESDAY, April 5, 1841.

Present :—

CHARLES COWPER, Esq., in the Chair.

Francis Lord, Esq.
John Lamb, Esq.
Thomas Icely, Esq.

William Dumaesq, Esq.
The Colonial Secretary.

Thomas Woore, Esq., called in and examined.

1. How long have you been in the colony?—Between eleven and twelve years: I previously paid several visits to the colony, but I did not settle here till 1836.

2. In what capacity did you make the visits you speak of to the colony?—As a lieutenant of Her Majesty's Navy, in different ships.

3. How many years were you in the navy?—Eighteen.

4. During your service in the navy were you employed in the surveying duty?—Yes, I have been extensively employed in surveying.

* These extracts are deemed too voluminous to print; but being in the hands of the Honorary Secretary, they may be read by any member of the Committee.

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5. And during your residence in the colony you have been following the pursuits of a settler?
—Yes.
6. You have more recently been occupied in making a survey for a railway, have you not?
—Yes.
7. Will you state to the Committee the circumstances under which you were induced to undertake that duty?—A move was made, about two years since, towards the establishment of railways in the colony, when my friends suggested to me that I should interest myself in the matter; and having a good knowledge of the county of Cumberland, and the country between this and Goulburn, I inspected it to ascertain whether a practicable line could be found.
8. You first made, I believe, a very rough estimate as to the probability of forming a line, and subsequently entered into engagements to survey it more accurately?—After examining the country between Sydney and Goulburn, I made a report to the Committee appointed by a public meeting of the colonists to investigate the subject, on which it was resolved that a subscription should be entered into to defray the actual expenses to be incurred, I volunteering to give my services gratuitously for the present, but reserving a claim on the plans for my future remuneration.
9. Has this survey satisfied you of the practicability of making railways through the line of country which you have passed over and examined?—Without any doubt it has in Cumberland; but as to the ascent to the table-land of Argyle, I cannot give so positive an opinion, without further experience of the capabilities of locomotives. I am strongly impressed with the idea that it is practicable, but I cannot say positively. I believe such an ascent has never yet been attained.
10. What is the steepest gradient?—One in 30; but I allude more particularly to the whole ascent, 2,300 feet: no such ascent has ever been attained that I am aware of.
11. Within what distance are you required to make that ascent?—Upwards of 2,000 feet of it must be ascended within 32 or 33 miles. This is the great difficulty to be overcome in carrying a railway to the southward.
12. To confine yourself at present to the county of Cumberland, what is the general character of the country through which you propose to carry the line?—Level.
13. Is the soil generally soft or hard?—Soft; it is of sandstone formation throughout, but of a soft nature.
14. You have read the report of Mr. Wilkinson, an officer of the Surveyor-General's department in New Brunswick, recently printed by order of the Council?—I have.
15. What is your opinion of the applicability of the system of railroads referred to in that Report to the circumstances of this colony?—It appears to me generally applicable, but I consider that there is a great difference between the structure of the soil of America and that of this country. There it is very soft, arising from the moisture of the climate, and there is a great quantity of alluvial deposit which is peculiarly favourable to the driving of piles, and very unfavourable to the formation of earthen embankments; here, the soil is generally too dry and firm: it would be impossible to drive piles, but timber may be used extensively in the place of embankments. The nature of the timber in this country is very superior for that purpose to anything that is grown in America.
16. Have you ever been in America?—I have been through the United States, Canada, New Brunswick, and Nova Scotia.
17. You speak, then, from actual knowledge as to the timber and nature of the soil generally?—I do.
18. Do you allude to any particular timber as suitable to the formation of railroads in this colony?—No; the iron bark, no doubt, will answer best for rails, but almost any of the other kinds will serve for the sub-structure. It is all extremely durable.
19. Through the country over which you have passed, did it appear to you that there would be an ample supply of timber without going to great expense for carriage?—Yes; there is plenty all along the line, except in the immediate vicinity of Sydney. In fact, a great deal of timber cut down on the line will answer for sleepers; it will fall on the spot where it is to be used.
20. You have printed the Report which you made to the Committee, in the shape of a pamphlet?—I have; and I beg to hand in a copy for the information of the Committee. [*Witness handed in the same. Vide Appendix.*]
21. Will you have the kindness to state to the Committee upon what data you make the estimate with which this Report concludes?—On the police and custom-house returns for the year 1847.
22. As to the traffic?—From the books of the proprietors of the different coaches.
23. Then while you were engaged in making this survey, you availed yourself of every opportunity of obtaining information, with a view of ascertaining what the traffic probably would be when the line was made?—What the traffic actually was at the time I made the survey was what I endeavoured to estimate. I rejected everything that did not furnish positive data as to what the traffic actually then was. There is a large amount of traffic now existing on the road of which I have taken no notice.
24. Are you still of opinion that the estimate you have there made of the probable cost of the line is an approximation to the truth, or do you think that if the railroad were made upon the principles laid down in Mr. Wilkinson's Report, that the expense would be reduced?—I do not see any reason to alter my estimate; Mr. Wilkinson's Report has been mainly useful to me in confirming my pre-conceived views. In my Report, I have recommended the use of timber very extensively, but it may perhaps be introduced with advantage in some other works.
25. You do not contemplate the possibility of doing away with any of the embankments or

cuttings upon this scheme any more than upon your own?—I do not. In America, the piling system has been found to be very advantageous, from its economy, and guarding against the serious evils arising from the sinking of the embankments; the surface of the soil generally being so soft as to be incapable of bearing these great weights, and peculiarly applicable to the driving of piles. In this country the surface is of a directly opposite character: it would be impossible to drive piles except in a few instances; but the same soil, that is, the sinking of extensive embankments, although it will arise from a totally different cause, must be carefully guarded against, owing to the uncertain periods at which heavy rains descend in this country; the extensive embankments may remain for months or years before they become finally settled; as long as they are dry, a safe foundation for the railway will be obtained, but the first heavy rain that falls must disorganize them. In other countries the rains being more regular and frequent, the embankments settle to a considerable extent as they are formed. It will require a considerable judgment in constructing them, and it may be necessary that we should use timber upon the same principle as that proposed in the Report—namely, to raise trestles to carry the line on, and then to fill in with earth.

26. You allude to this part of Mr. Wilkinson's Report:—it saves much of the cost of embanking a road, by being able to transport the earth upon it to fill the valleys and swamps, and before it is necessary to do this, the income of the road is providing for the payment while it is constructing. It preserves the line and level of the road after the embankment is made; when roads are built on fills and cuts without piles, the superstructure is continually liable to be disturbed by the sinking of the banks, or water settling in the excavations, much to the injury of passing trains, breaking axles, and otherwise deranging the machinery of the engines?—I do; but it operates there in a different way. In America, the foundation is so soft that the embankments settle down considerably, as was the case in carrying the Liverpool and Manchester line across Chat Moss.

27. (*By Mr. Lamb.*) Do you think that either the piling or trestling without embankments, as recommended in Mr. Wilkinson's Report, is a very valuable suggestion in this colony, where floods come, even in very small valleys, with immense force?—There is no doubt of it. I have always considered that it was necessary to cross any river subject to inundation by means of viaducts formed of timber.

28. And even in the smaller hollows, would not embankments be liable to danger from floods?—That depends upon the quantity of water likely to descend from the neighbouring hills. If it be not too great, it would be much better to stop the surface water for the improvement of the country; it will be advisable, where there are small falls, to partially stop the water, but to allow it to escape when it comes to a certain height. I consider that this plan will give rise to a great improvement to the country generally, as owing to its being principally formed of sandstone, lying in horizontal beds, the water escapes over the surface, without penetrating the earth as it does in all countries where there is a considerable dip in the strata, giving rise to springs, and consequently dispersing the waters more generally over the surface.

29. (*By the Chairman.*) I think, in a former part of your evidence, you seemed to express some doubt as to the line beyond the county of Cumberland?—My hesitation was merely as to the gradients.

30. (*By Mr. Lamb.*) You are aware that even steeper gradients than that you have mentioned are overcome by stationary engines at the tops of heights?—Yes.

31. Are you aware that of late some experiments have been made, by which the stationary engines have been dispensed with, by means of a rope taken from the height and fastened to the locomotive engine, which has a sort of windlass attached to it?—I am not. I do not expect we shall be obliged to resort to stationary engines. It is specially with the view of ascertaining the best means of overcoming the difficulties on the line, having already obtained an intimate knowledge of the localities, that I am going to England. Improvements are taking place so rapidly in these matters, that I have no doubt before our line can reach these difficulties, that means will be discovered of easily overcoming them, even if it is not to be accomplished at present.

32. (*By the Chairman.*) Can you state to the Committee what proportion, generally, of the road you have surveyed passes through Government land; or what proportion of your estimate is intended to cover the cost for land?—In Cumberland, the line passes entirely through private property. But from the Nepean to Goulburn, I dare say two-thirds pass through Government land, which is generally of a very barren character. Almost all the good land between Goulburn and the Nepean along the line has been purchased from the Government.

33. (*By Mr. Lamb.*) Have you had any communication with the landholders through whose land this contemplated line passes, with a view of ascertaining their feeling upon the subject?—I think the advantages are so great to all landed proprietors that they would be glad to give the land required for the railway.

34. (*By the Chairman.*) Did you find that opinion borne out by communication with gentlemen to whom you have spoken upon the subject?—I think so.

35. (*By Mr. Lamb.*) In the event of the landholders not being disposed to give the land, do you think that the present minimum price of Crown land, 1*l.* per acre, would be a fair compensation to parties generally through whose land the line passes, even in the county of Cumberland?—I do; 20*s.* per acre would be a high average, with the exception of the immediate vicinity of Sydney? and there, owing to peculiar circumstances, I think sufficient land for our purpose may be obtained at a very reasonable rate.

36. Without reference to improvements?—Very little compensation will be required for the few improvements with which the line interferes.

37. (*By the Chairman.*) Will you state to the Committee what proportion of your estimate of the cost of the line is intended to cover the amount of compensation for the land that will

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be required?—I have estimated 3,000*l.* for the land in the immediate neighbourhood of the Sydney terminus, and 20*s.* per acre for the land on the rest of the line.

38. What is the total amount of the estimate for the line to Rope's Creek?—51,941*l.*, exclusive of superintendence, to cover which and allow for unforeseen expenses, I have added 14,485*l.*, making a total of 66,426*l.*

39. Do you think, upon mature consideration, that 24 miles could be done with that money?—I believe so. I think an effective line can be made for that amount, if wooden rails are used, and the money is judiciously expended.

40. Does that include the cost of engines?—Everything.

41. Can you favour the Committee with any information as to the amount of labour which you consider would be necessary to carry out a line to Rope's Creek, or any other shorter or longer line within the county of Cumberland, in the event of a Company being formed for that purpose?—Works of this nature never having been undertaken in this colony, it is difficult to arrive at the precise amount of labour necessary. I have made a calculation of the number of men likely to be required, to execute that portion of the line which I have recommended in my Report to be first undertaken, that is, from Sydney to Rope's Creek, thence to Penrith, and from Rope's Creek to Camden, comprising 49½ miles. The earthen-works on this portion will amount to 1,010,381 cubic yards; allowing one man to cut out six yards per day, 561 men would execute that quantity in 300 days (or the working days in one year); then, allowing 200 men to carry the earth, 761 men would be sufficient to complete the earthen-works in that time; for closing, fencing, preparing, and laying down the rails, &c., allow 239 men, and we have 1,000 men to execute the whole in one year. This estimate is, I think, not far from the mark, but it must greatly depend on whether the cutting takes place in wet or dry seasons.

42. Not including the branch lines to Parramatta, Windsor, or Liverpool?—No; there will be less labour required on the Windsor or Parramatta branches. The Liverpool branch is rather expensive, owing to there being a larger amount of cutting required.

43. (*By the Colonial Secretary.*) Have you made any experiments with the timber of this country, to ascertain its eligibility to these purposes?—I have not, but I have a large collection prepared to take to England with me, to have experiments made upon it, in order to ascertain the qualities of the different species; this is actually necessary before we attempt to construct our works.

44. Are these in logs, or merely in small specimens?—In small pieces, of the size that experiments are usually made on, but I contemplate also taking some logs of iron bark and blue gum, for the purpose of being laid down as rails in England, to ascertain their working by actual experience, owing to our timber being different from all others. I consider that its qualities should be well ascertained before we commence the work; a few pounds expended in these experiments will save thousands hereafter.

APPENDIX.

REPORT on the proposed RAILWAYS in NEW SOUTH WALES, made by THOMAS WOORE to the PROVISIONAL COMMITTEE.

GENTLEMEN,

I HAVE the honour now to submit to you the survey which I have completed, under your authority, with a view to the establishment of a great line of railway between Sydney and Goulburn, traversing the counties of Cumberland, Camden, and Argyle, and connecting the principal townships therein.

In taking a general view of the country to be traversed, I find that the greatest difficulties we have to overcome lie between the county of Cumberland and the Mittagong Range, in Camden, not only on account of the uneven surface of that part of the country, but from the great and sudden elevation that must be attained to cross that range.

The formation of this portion of the country is principally sandstone, lying in horizontal strata, of so soft a nature as to be easily cut into fissures by the action of the running streams, the sides of which are continually crumbling away, and opening into extensive ravines from atmospheric influences, which have been at work for ages.

This gives rise to the unusual appearance the rivers of this country often present, for where they pass over the sandstone formation, they traverse the country in deep ravines, the sides of which are mostly precipitous, and in some cases terrific to behold; then, suddenly breaking from this, they enter into tracts of a totally different geological structure, where they gently meander between grassy banks, formed principally of alluvial deposits; and so abruptly do these changes take place as to have a very singular and picturesque effect.

The streams descending from the Mittagong Range into the Nepean River, all passing over sandstone formation, have cut the country into a series of deep ravines, most of them of an impassable character; to cross any of these by a railroad must always be a work of considerable difficulty and expense. Fortunately they generally take the direction we have to traverse in order to reach Goulburn, otherwise the formation of a railroad would be extremely difficult; but by taking advantage of the leading ridges between these rivers (some of which are very level), a railroad may be formed at a moderate expense.

The elevation of the gap in the Mittagong Range (through which I propose to carry the line), being the lowest point, is 2,330 feet above the level of the sea, and this rise takes place principally between the Nepean River and the range, for the course of that river is extremely level, and not much above the sea at the points of crossing it, being at Vermont, 97 miles from its mouth in Broken Bay, only 128 feet; at Camden 145 feet; and at the Pheasant's Nest, where the eastern line crosses about 250 feet above the sea, consequently an ascent of upwards of 2,000 feet must be attained between the Nepean River and the gap in the Mittagong Range.

The attainment of this elevation, by such inclines as may be worked with safety and economy is, I conceive, an object of the first importance. I have consequently given the most anxious attention to this point, for there are no obstacles either within the county of Cumberland, or between Bong Bong and Goulburn that may not be overcome with comparative ease.]

To traverse the country thus described, two district routes may be taken, as far as the Mittagong Range.

One across the Cataract and Nepean Rivers, through the estate of Sir Thomas Mitchell, and up the ridge that lies between the Nepean and Bargo Rivers to the Range. This I designate *The Eastern Line*.

The other crossing the Nepean River at Vermont, and passing through the Oaks country, up a parallel ridge that lies between the Bargo and the Nattai rivers, which may be termed *The Western Line*.

These three rivers take their rise in the Mittagong range, and flow to the northward in a nearly parallel direction, leaving two lengthened ridges between them.

In comparing the two lines, I find a saving in distance of 10 miles on the eastern, the whole distance to Goulburn by it being 122 miles, while that by the western is 132 miles; but in considering the elevations, I find that the distance between the point of crossing the Nepean river, at East Bargo, on the eastern line, and the point where the lines conjoin near the Gap in Mittagong, is 16 miles; while that between the Nepean, at Vermont, and the same point on the western line, is 34 miles; consequently we have a base on the western line of more than twice the length of that on the eastern to enable us to gain this great elevation, namely, 2,000 feet. This is a matter of considerable importance, and gives the western line a decided advantage over the other, as the inclines will consequently be more gradual.

For instance, in comparing the immediate ascent to the high land of Mittagong, which is the greatest difficulty to be surmounted on either line, that at the Little Forest on the eastern line rises 305 feet in a mile for 2,160 yards, or about a mile and a quarter, which would form an incline of 1 in 21, while that at the wall on the western line rises 170 feet in the mile for the distance of three miles, making an incline of 1 in 30, which I imagine is as much as any locomotive engine can perform.

In reviewing the difficulties to be overcome in the construction of these two lines, I find that those on the eastern are of much greater magnitude than those on the western, as the former takes its direction across two of the ravines already described.

The point of crossing the Cataract River, as shown in the plan, is 514 wide, and 241 feet deep, the sides of this chasm being formed for the most part of perpendicular walls of rock; and the crossing of the Nepean River, at the Pheasant's Nest, also on the eastern line, is 875 feet wide, and 295 feet deep, from the edge of the cliff, but the depth from the banks on each side is 350 feet, exceeding the Menai Strait, at the point where the Britannia Bridge is now being constructed by that most ingenious engineer, Mr. Stephenson; but such works are quite beyond the means of this country. Sir Thomas Mitchell has proposed to cross them by taking advantage of the neighbouring water-courses, and descending into the chasm; but such a plan I conceive wholly inadmissible for a railway; for although very practicable for turnpike-roads, the danger of such a descent on the sudden curves that would be here unavoidable, renders it highly objectionable, if not altogether impracticable.

The most extensive works required on the western line are the bridge and viaduct across the north head of Bargo River, where the gully is 98 feet deep; and that across the Deep Creek, near Vermont, which would require a viaduct 400 feet long, and 98 feet high, over the watercourse, lessening to 40 feet at each extreme.

The difficulties of the eastern line here pointed out led me in the first instance to search for a more convenient one, without any reference whatever to the future traffic; for taking into consideration the great elevation of the county of Argyle, which it was our object to reach, the question with me was—whether it was possible to find any practicable line? Not that having a choice of lines, I might consider which was the best; but in this point I find the western line has also a decided advantage over the eastern, as the first 24 miles of it (starting from Sydney), which runs directly into the centre of Cumberland), will answer as a trunk line, affording great facility for extending branch lines to the different towns, collecting all the produce, and affording communication through every part of the county. That to Penrith will provide accommodation to the Bathurst, Wellington, and Mudjee districts, so that in point of fact, the whole of the wool, tallow, hides, &c., exported from the port of Sydney, with the exception of that received coastwise, and all the produce of the country consumed there must pass over this trunk line; it would also have the advantage of the conveyance of all the internal mails, and of affording direct communication between the northern and southern parts of Cumberland, as well as connecting them with Sydney.

Whereas the eastern line passing along the eastern verge of the county, can only afford communication to Campbell Town and Appin; it is excluded from extending branch lines into the centre of Cumberland, unless at considerable expense, by having a range of high land immediately to the northward, extending in a parallel line from the Orphan School Hills to the Nepean River.

The western line passes through a much more productive country than the eastern.

Taking these circumstances into consideration, I have been so impressed with the superiority of the western line, that my attention has been devoted chiefly to the details of it, and I have made a minute survey throughout its whole extent, comprising the branch lines to Windsor, Penrith, Parramatta, Camden, and Liverpool. Either the Penrith or Windsor lines may be hereafter extended to Bathurst, as may be found practicable, and the Liverpool line I purpose carrying on through Campbell Town to Appin, so as to give those districts the benefit of railway communication in common with the rest of the colony.

The line proposed by Menangle Ford being open to all the objections of the eastern line, with the additional inconvenience of being obliged to cross the Nepean River at a lower level than the Pheasant's Nest, and of being so confined between that river and the Razorback Range, that we should be obliged to cross all the spurs extending from the Range at considerable expense and deviation from a straight line, I have not thought it advisable to delay bringing forward this Report by minutely examining it.

The direction of the line I described when last I had the honour of reporting to you, has been scarcely deviated from, with the exception of the neighbourhood of Parramatta, where I found that, instead of diverting the main line from its direct course between Sydney and Prospect, in order to approach that town, it was necessary to keep a higher level crossing the ridge which divides the waters of Prospect Creek from those of the Parramatta River, more to the southward, and avoiding the high land in Sherwin's estate, but I have carried a branch line from Haslem Creek into the town.

Had the main line been carried into Parramatta, as I originally proposed, we should first have to descend nearly to the level of high water, losing the elevation already gained, and having afterwards to ascend a much higher level than where we now cross the ridge. The waste of tractive power both ways

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would necessarily be great, besides the increased distance; and when it is taken into consideration that nearly the whole traffic by land between Sydney and the interior of the colony will pass along this line, the loss would be very considerable.

Whereas a branch line will afford equal advantages to the town and surrounding district, and not cause any additional expense to a Company; for were the main line to pass nearer to Parramatta the branch to Liverpool must be extended in proportion.

In dealing with the main line, I have divided into three sections:—

The first, which may be called the *Northern Section*, comprises that part of the line extending from Sydney to the Nepean River, being 40 miles in length.

The second, or *Middle Section*, comprising that portion between the Nepean River and Bong Bong, 44 miles.

The third, or *Southern Section*, from Bong Bong to Goulburn, 46 miles.

The northern and southern sections of the line are comparatively level, while in the middle section the great rise in the country takes place, consequently the working of the two former sections will be less expensive than the middle, and the northern less than either, and it is probable that engines of different power will be required to work each; but these are matters on which it would be premature in me to hazard an opinion—they must remain for future consideration, when the experience of English engineers is brought to bear on the local information I have collected.

Having obtained the best section I could find of the intervening country, it next became my duty to lay down the gradients—these I found considerable difficulty in determining on, from the absence of anything like authentic information as to the capabilities of the improved locomotive engines, and from the want of experience in the practical working of railroads; besides, as we are in hopes of introducing rails composed of our hard timber in lieu of the iron generally used, a somewhat new system must be adopted in this colony, and experimentalized on, before a correct judgment can be come at. Were the country all as level as Cumberland, I apprehend there would be no difficulty, but in the great ascent to Argyle, the powers of the engine will be tested to the utmost, and every advantage must be taken.

I have, however, attempted it, in order to come at the probable expense of constructing the line, and although it is probable some of the gradients, particularly those in Camden and Argyle, will require to be altered, still I find from information I have since received from England, that the estimate I formed of the capabilities of the engine has been pretty correct, and that the alterations, if any, will be slight, and not materially affect the general estimate.

Before entering on the gradients, I beg to transcribe the extract I have received from England on that subject: it is very satisfactory, and of considerable importance to us, as giving us data from which we may now draw correct conclusions:—

“The difference of expense in construction between a line of first-class gradients, as it was called, i. e., none steeper than 1 in 200, and one of second-class gradients, rising up to 1 in 100, was frequently not less than 10,000*l.*, 20,000*l.*, or even 30,000*l.* per mile. The London and Birmingham, Great Western, and Brighton lines, for instance, averaging about 50,000*l.* per mile, while the Grand Junction and South Western did not exceed from 20,000*l.* to 25,000*l.* Experience has fully proved, that no saving, either of time or economy of working, has been attained at all commensurate with this enormous additional outlay of capital. Indeed, in many cases, cheaply constructed lines have been worked at an equal or less expenditure for locomotive power, and at as high an average velocity as lines constructed at twice the expense.

“This is so universally admitted, that such gradients as were formerly thought objectionable, are now adopted every day as a matter of course; and as the capabilities of the locomotives have been enlarged, gradients of a class which would have been a few years ago altogether impracticable, have come into general use.

“It is important to ascertain, by reference to actual practice, the results that have been already arrived at, and which must be taken as starting points to guide us in the consideration of any new scheme.

“The Lickey incline, on the Birmingham and Gloucester Railway, is a conclusive proof that a gradient in 1 in 37½ for a length of two miles three chains, may be worked by the aid of an engine constructed for the purpose, without serious inconvenience to an extensive traffic. It is also a proof that such an incline may be descended without danger, by the force of gravity, regulated by the action of breaks.

“The Sutton incline of 1 in 88, on the Liverpool and Manchester Railway, is surmounted by the ordinary trains of that railway, whose traffic is of a very heavy description, with a single locomotive engine.

“On the Newcastle and Carlisle line, an incline of 1 in 106 for four miles consecutively is surmounted by the ordinary trains of that railway without difficulty or delay.

“The use of a stationary engine for ascending an incline on the Manchester and Leeds Railway from the Victoria Station, which is 1 in 59 for 1,000 yards, and 1 in 49 for 640 yards, has been in a great measure discontinued, the ordinary engines being found capable of taking up its heavy passenger and goods trains of not less than 80 tons weight.

“On the Edinburgh and Glasgow Railway, stationary power has also been discontinued, the locomotive engines being found a more efficient and economical substitute on the Glasgow incline of 1 in 42 for 1½ mile; and recently the locomotive engine has been equally substituted for stationary power on the inclined planes of the London and Birmingham Railway, from the Euston-square terminus to Camden Town, parts of which are 1 in 66 and 1 in 75.

“Many other facts of a similar nature might be quoted, but the above seem quite sufficient to establish the general propositions.

“1st. That gradients of 1 in 50 to 1 in 100 are perfectly practicable to the ordinary locomotive engines with moderate loads.

“2nd. That gradients up to 1 in 37½, or higher, may be surmounted by heavy trains, with the aid of an assistant engine of peculiar construction.

“The application of these facts requires much discrimination. Nothing can be more fallacious than a mere comparison of gradients, upon two lines, without reference to the peculiar circumstances.

“Experience seems also to establish, that under these circumstances, i. e., of a large local traffic, with frequent trains, light loads, and numerous stoppages, the traffic may be conducted not only with far greater economy, but also without loss of speed or other inconvenience to the public.

“A remarkable instance of this is afforded by the working of the traffic between Oldham and Manchester, which has to pass over inclines of 1 in 59, 1 in 48, and 1 in 27, for two miles, the whole distance being seven miles, and the gradients for the remaining five miles 1 in 150.

"Ten trains are run each way, carrying on an average of 1,200 passengers, and 300 tons of goods, per day, at an average speed of 22 miles per hour.

"The working of the North Union, Newcastle and Carlisle, and other lines, also afford a proof, that with light trains the effect of steep gradients on speed is very limited.

"The experience of the cases above quoted appears also sufficient to show that gradients ranging from 1 in 100, up to 1 in 50, or even a higher inclination, may be worked, under ordinary circumstances, with perfect safety.

"2nd. With regard to curves :—

"On this point, also, practical experience has led to a great modification of the ideas formerly entertained.

"The Newcastle and Carlisle Railway presents an instance of a line which is almost one continued succession of curves, of every degree of curvature, up to eight chains radius, and with steep inclines, being worked with economy and safety.

"The Manchester and Liverpool Railway Company, in their extension line through Salford, have introduced curves bending in a serpentine direction, two of which have radii of 10 and 12 chains respectively, over which all their trains pass daily.

"The Manchester and Leeds line has two curves of 10 chains radius, away from any station, and on a gradient of 1 in 82, over which their trains have been worked for upwards of four years without the slightest accident or practical inconvenience."

From this it will be seen that the expense of forming railroads in England is enormously decreased, simply by the improvements effected in the locomotive engines; that inclinations that a few years since it was thought impracticable to ascend, are now traversed with ease; consequently there is no occasion for tunnelling through mountains, or cutting through hills at a ruinous expense, as the engine has become so powerful as to drag loads of 80 or 100 tons over considerable heights; and when that is not to be done, it can take the load round the base of the hills in safety.

This affords us every encouragement to proceed, and I trust will be the means of dispelling the prevalent apprehension of the great cost of these works.

In reviewing the gradients, as I have laid them down in the northern section and extended branches, that is, throughout the county of Cumberland, it will be found that they range from 1 in 60 upwards; there are none higher, and only six that reach this pitch, the longest of which is a mile and a quarter. These, according to the foregoing statement, can be worked with ease by a locomotive engine of the ordinary power, consequently all the lines throughout Cumberland may be worked without difficulty or unusual expense.

I have seen no reason to cause me to alter my original proposition of fixing the Sydney Terminus at the head of Darling Harbour, where there is great facility for shipping and receiving goods conveyed by water, and also of opening a communication with the main street at the bottom of Brickfield-hill, for the convenience of passengers and light goods.

Starting from this point, the line will ascend the ridge to O'Connell Town, where it gains a height of 111 feet above high-water level, by a gradient of 1 in 60, 2,383 yards in length, passing over Black-wattle Swamp on a brick viaduct of 15 arches, each of 30 feet span, and over Parramatta-street on a handsome askew bridge of sandstone. This bridge will have two arches of 30 feet span each, and 15 feet high over the roadway, and two smaller, of 8 feet span over the footways, the whole forming a very handsome object at the principal entrance to the city.

The cuttings on this gradient amount to 30,600 cubic yards. We then traverse a level of 488 yards, skirting O'Connell Town, when we are obliged to descend 22 feet, on a gradient of 1 in 170, in order to traverse a valley in Cooper and Holt's Land, and again ascend 1 in 91, to cross the Petersham Hills. The embankment across this valley is the heaviest on this section of the line, containing 44,081 cubic yards. The level might be preserved without this cutting, but at the sacrifice of making a considerable detour. We now find ourselves 141 feet above high-water mark, which I may here remark is dated from a course in the masonry 3 feet 8 inches below the Steam Packet wharf head at Paramatta, and are again obliged to descend to cross Iron Creek, near the spot where the Canterbury road crosses it, by a gradient of 1 in 71, 1,866 yards long. There is another very heavy embankment here of 35,312 cubic yards, which is procured from the cuttings in Petersham. We now ascend the last considerable rise to Ashfield (for after passing this village the country becomes more level), on a gradient of 1 in 67, 1,333 yards in length, when we are again at a height of 115 feet above the datum line.

Our next gradient is descending to Baron's Creek, 1 in 60, 1,466 yards, running on a curve, with a radius of 3,000 feet, and at the end of the gradient another curve extends of 2,080 feet radius. These curves may be enlarged, on more minute examination, but at the time I measured them, not knowing to what extent they could be worked with safety, I made another section of a different line, that avoids them, but on which the cuttings are more extensive.

Up to this point the line describes a curve in its general direction, but from hence it pursues nearly a straight line, west a little northerly, to Rope's Creek, a distance of 17 miles. From Baron's Creek to Haslem Creek station, which is 10½ miles from Sydney, and from which it is proposed to extend branch lines to Paramatta and Liverpool, the line is formed by gradients of 1 in 149, 1 in 92, 1 in 281, 1 in 92, 1 in 64 of 750 yards, a level of 1,530 yards, and 1 in 60 of 888 yards.

The cuttings up to this point, amounting to 324,413 cubic yards, or 30,819 cubic yards per mile; they are heavier than on any other part of the line, in consequence of the hilly nature of the country about Sydney.

Leaving Haslem Creek station, we pass over the ridge between that creek and Duck River, on an ascending gradient of 1 in 60, 950 yards, and a descending of 1 in 70 of 1,333 yards. Crossing Duck River we ascend 1 in 70, 1,100 yards, and then pass over gradients of 1 in 81, 1 in 183, 1 in 110, 1 in 433, 1 in 77, 966 yards, and 1 in 90, ascending; 1 in 93, 950 yards, 1 in 89 of 800 yards, 1 in 158, 1 in 615, 1 in 107, 1 in 984, 1 in 60 of 800 yards, and 1 in 76 of 733 yards, descending to Eastern Creek, from which the Windsor branch extends; then 1 in 90 of 600 yards, 1 in 100, 1 in 75 of 1,100 yards, ascending; and 1 in 75 descending to Rope's Creek, of 1,633 yards in length.

We are now nearly 24 miles from Sydney, and 182 feet above high-water level.

It is on this creek I propose placing the principal internal station, as from this point would diverge the lines to Penrith and Bathurst, and through it the communication between the northern and southern parts of Cumberland will pass.

From Haslem Creek station to this point the cuttings will amount to 324,413 cubic yards, on an

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average of 24,116 cubic yards per mile; and there being 32 bridges required for crossing roads, water courses, and for accommodation between Sydney and this creek, the average will be $1\frac{1}{4}$ for each mile. There will also be 35 culverts required.

From Rope's Creek station the main line takes a more southerly direction, and falls into a very level country, on the banks of the South Creek, passing through Bailey Park and Fleurs, the estates of Major Darvall and his son.

After ascending a gradient of 1 in 66 for 666 yards, the main line descends for two miles on gradients of 1 in 114, and 1 in 133; the next five miles are on a level, and two gradients of 1 in 714, and 1 in 647, crossing the South Creek at six miles from Rope's Creek station; it then ascends 1 in 176 for 1,466 yards, at which point, on the banks of the South Creek, in Captain King's estate, called Bellevue, the Camden branch takes off.

This station will be eight miles from Rope's Creek, and nearly 32 miles from Sydney, although only 176 feet above the sea.

The cuttings on these eight miles are very light, being only 68,406 cubic yards, or 8,551 cubic yards per mile.

We now commence a continuous ascent of $3\frac{1}{4}$ miles, in order to cross the ridge that separates these waters from the Nepean River, on gradients 1 in 75, 1 in 95, 1 in 166, and 1 in 86, passing through the estates of Captain King, R.N., Messrs. Hutchinson and Liddington, to Greendale, the estate of George Wentworth, Esq., at which point it gains the summit level of this section of the line, being 373 feet above the datum line.

In descending from this we have the heaviest gradient on the line, being 1 in 60 for 2,466 yards, or not quite a mile and a half. We continue descending the Bringelly Creek, leaving the estates of Shancamore on the right and Vermont on the left, by gradients of 1 in 164, 1 in 975, 1 in 106, and 1 in 230, till we reach the Nepean River, 40 miles from Sydney.

The bed of the river is, at this point, 128 feet above high-water level, but as the line passes 40 feet over it, our level is 168 feet.

Here it is probable a more extensive station will be required to facilitate the repairs of the heavier engines that will be required for the next section of the line, and that assistant engines may be at hand if required, to assist heavy trains up the long inclines on the Eurethe Range. The cuttings on the last $8\frac{1}{4}$ miles amount to 104,114 cubic yards, averaging 12,607 cubic yards per mile.

There will be 25 bridges required to cross roads, water courses, and for accommodation between Rope's Creek and this station, averaging $1\frac{1}{4}$ to the mile; also 22 culverts.

I shall now review the branch lines, as they come under the same class of gradients as the northern section does.

To commence with that to Penrith, being of the greatest importance, in consequence of its leading to the present line of road from Bathurst, the line, after leaving Rope's Creek, continues the direction of the main trunk, west a little northerly, and runs nearly straight to Penrith, passing through Erskine Park, the estate of Major Darvall, Mamre, Sir Maurice O'Connell's property, and that of Messrs. Smith, Tindall, and Mrs. M'Henry, leaving the town of Penrith on the left, and terminating on the bank of the Nepean River.

It first ascends 1 in 155, for a little more than a mile, then descends 1 in 60, 1,300 yards; 1 in 306, 1 in 63,866 yards, and 1 in 111, till it reaches South Creek on a level, $3\frac{1}{4}$ miles from Rope's Creek Station; it then ascends 1 in 62, 1,466 yards; descends 1 in 69,666 yards; again ascends 1 in 63, 1,200 yards, where it arrives at an elevation of 190 feet, on the top of the same ridge that the main line crosses at Greendale, as that ridge extends for a considerable way along the right bank of the Nepean River. It here descends 1 in 60, 1,033 yards, passes along a level, and ascends 1 in 76, 1,016 yards, then descends 1 in 63, and 1 in 140, to the level of the banks of the Nepean, the bed of which, at this point, is 72 feet above high-water level.

This branch is $9\frac{1}{4}$ miles in length, making the banks of the river $33\frac{1}{4}$ miles from Sydney.

The cuttings amount to 166,312 cubic yards, averaging 18,410 cubic yards per mile.

There will be 11 bridges wanted, averaging $1\frac{1}{4}$ per mile and 6 culverts.

The Camden Branch leaves the main line in Captain King's estate, Bellevue, and passes up the left bank of the South Creek through the Retreat Farm, Alfred Kennerley, Esq., the Hutchinson estate, Nonnorah and Netherbyers, the estates of M. D. Hunter, Esq.; a part of Orielson, and Kirkham, the property of John Oxley, Esq.

The banks of this creek are particularly level throughout, and little more will be required than forming the road before laying the rails down.

The gradients are 1 in 620, and 1 in 300 for four miles. We then leave the Creek, and ascend the ridge we have already crossed twice, once on the main line, and again, on the Penrith Branch, by a gradient of 1 in 87, 1,900 yards, traversing a level of 1,466 yards. We again ascend 1 in 86, 1,533 yards, which brings us to the summit level of this branch, 337 feet above high-water level. We now descend 1 in 100 for $1\frac{1}{4}$ mile, and making a short ascent of 1 in 100, again descend to the Kirkham Flats, by an incline of 1 in 65, of rather more than a mile in length. On the flats we preserve a level till we reach the neighbourhood of the Cowpasture Bridge, over which the present traffic to and from the southern counties passes; but I am in doubts whether there is not a better line in descending from this ridge, by keeping to the northward of Kirkham House. This I shall examine more particularly at a convenient opportunity.

The extent of this branch is $10\frac{1}{4}$ miles, which makes the Cowpasture Bridge $42\frac{1}{4}$ miles from Sydney.

The cuttings amount to 258,299 cubic yards, averaging 24,538 cubic yards per mile, the first portion of the branch being peculiarly level. The heavy cuttings are on the ridge, and that at Kirkham, in order to obtain sufficient earth to form an embankment to cross the flooded lands, is the heaviest in Cumberland, amounting to 121,205 cubic yards, but this I hope to avoid, and obtain a better gradient, by taking the course above mentioned.

There are 15 bridges and 18 culverts required on this line, averaging $1\frac{1}{4}$ of the former to a mile.

The Windsor branch is extremely level, and very straight throughout its whole length; it passes down the left bank of the Eastern Creek, through Wallgrove, the property of Mr. Roberts; Rooty Hill, the Church and School estate; Mr. Hall's property at Black Town, and those of Messrs. Pye, Bóbart, Betts, Marsden, Fitzgerald, Teale, Allen, and Hale.

The gradients are 1 in 195, 1 in 600, 1 in 218, 1 in 680, 1 in 350, 1 in 686, a level, 1 in 256, 1 in 2,180, and 1 in 326; and the cuttings very trifling, amounting to 149,654 cubic yards, and averaging 9,644 cubic yards per mile.

There will be 20 bridges and 18 culverts required, averaging $1\frac{1}{2}$ of the former to a mile.

This branch is $15\frac{1}{2}$ miles long, making the whole distance from Sydney to Windsor $36\frac{1}{2}$ miles.

The Parramatta and Liverpool branches leave the main line at Haslem's Creek, $10\frac{1}{2}$ miles from Sydney. The former, after describing a curve, the radius of which is 1,600 feet, takes a north-westerly direction, and passes through White's, Hall's, and Ellison's land—crossing the Parramatta Road (under an askew bridge, so as not to interrupt the traffic on the turnpike road), then through a corner of Newington—Mr. Blaxland's property—crosses Duck River, at the junction of Duck Creek, enters the estate of Colonel Macarthur, and passing over the Flats, terminates at the Steam-packet wharf, at a distance of $3\frac{1}{2}$ miles from Haslem Creek station, making the whole distance from Sydney rather more than 14 miles.

The gradients are 1 in 193, ascending 1 in 390, 1 in 66, of 933 yards; 1 in 150, and 1 in 468 descending, and a level of a mile in length.

The cuttings amount to 31,225 cubic yards, or an average of 8,096 cubic yards per mile.

There will be five bridges, and two culverts required, and a dam across Duck River.

The Liverpool branch leaving Haslem Creek, describes a curve of a mile radius, and then takes a south-westerly direction, passing through the properties of Mrs. Chisholm, Messrs. Jenkins, Barber, Whitfield, and Graham, where it crosses the Dog-trap road on a level; then through the properties of Messrs. Johnson and Horsley; crossing Prospect Creek, which is 130 feet wide, on a viaduct, and the Liverpool Road, about a quarter of a mile from Lansdowne bridge; then through the properties of Messrs. Bowler, Prout, Dickson, Eccles, Church and Government land, terminating at a point near the hospital at Liverpool, from which the line may be conveniently extended up the banks of George's River to Campbell Town and Appin.

This branch will be $7\frac{1}{2}$ miles in length, making the distance from Sydney to Liverpool $18\frac{1}{2}$ miles.

The gradients are 1 in 55, 1,100 yards, ascending; 1 in 70, 1,533 yards, descending; 1 in 102, 2,033 yards ascending; 1 in 90, 1,516 yards, descending; 1 in 240, 833 yards, ascending; and 1 in 92, 1,666 yards, descending to Prospect Creek, where it is only 12 feet above high water. The sea ebbs and flows in this creek, the rise and fall being about 3 feet. From thence we have gradients of 1 in 350, 1 in 560, and 1 in 640, to Liverpool.

The cuttings amount to 176,396 cubic yards, averaging 22,194 cubic yards per mile.

There will be seven bridges and five culverts required.

I do not apprehend there will be any difficulty in the excavation of the cuttings, as there is no appearance of primitive rock.

The soil in the county of Cumberland may for convenience be classed under the following three denominations; it is apprehended that these will sufficiently comprehend all the varieties through which any cutting will be requisite:—

1st. Coarse-grained sandstone, or that in the neighbourhood of Sydney.

A sandy or gravelly surface alternating with ledges of coarse-grained silicious sandstone, generally very easy to quarry or cut, and resting in beds nearly horizontal, seldom exceeding a few feet in thickness.

2nd. The forest or scrubby country.

A surface of poor gravelly or sandy loam, of little depth, resting on a strong tenacious clay, varying from a few feet to 4 or 5 yards in thickness, which again reposes upon shale, generally of a loose shelly description, and in horizontal beds, with occasionally thin beds of fine-grained calcareous or clayey sandstone, alternating with the shale.

3rd. The open forest hills, of generally a fertile character, with abrupt slopes,—such as the ridge lying along the eastern bank of the Nepean River, which we cross in three places.

The surface soil, for the most part a friable loam, resting upon mild reddish clay, which, after two or three feet, usually passes into a soft disintegrating stone, in which are embedded moderately sized blocks of hard calcareous sandstone.

The greater part of the line passes through the secondly described formation.

The main line in Cumberland, with the adjoining branches, comprises a distance of nearly 86 miles.

In the middle section, or that part extending between the Nepean River and Bong Bong, where the great rise in the country takes place, immediately after crossing the river (which I propose doing by means of a bridge of 80 feet span, constructed of timber, resting on stone piers, the bridge supported by three lamina ribs placed over the roadway), we commence the ascent on the Eurethe Range, through the Theresa Park Estate, by an incline of 1 in $37\frac{1}{2}$, which extends 3,967 yards, or $2\frac{1}{2}$ miles; this I call the "Theresa Incline." We then traverse a mile on a level, and again ascend another incline of 1 in 38 of 2,667 yards, and 1 in 44 of 2,067 yards, or nearly $2\frac{1}{2}$ miles, called the "Oaks Incline," when we reach an elevation of 867 feet above the sea.

At the top of each incline there is a curve, that on the Theresa of 1,800 feet radius, and that on the Oaks of 3,800 feet.

On the Theresa Incline, we cross the deep creek at an elevation of 98 feet over the watercourse—this is one of the most extensive works we have to form, being 400 feet in length, and 98 feet high in the centre. I propose doing it by means of four arches, of 60 feet span each, constructed of wooden framing, resting on sandstone piers, the centre 98 feet high, the adjoining 76 and 80 feet, and the extremes at the head of the embankments, 44 and 54 feet high—a plan of which I lay before you.

There are two other creeks, Turk's Creek and Hughes' Creek, to be crossed by this incline, which I intend doing by means of wooden viaducts, constructed of our rough unhewn timber, plans of which, with a simple method of erecting them, I also lay before you; there is abundance of both timber and stone in the neighbourhood.

The cuttings on the Oaks Incline are heavy, in consequence of the difficulty of describing the curve from the range being extremely narrow at this part—abruptly descending into gullies of two and three hundred feet deep on each side; but the soil being composed of a reddish loam apparently without any rock, the excavation will not be difficult.

We continue ascending 1 in 60, 1,100 yards, and 1 in 244, 1,467 yards, when we reach the summit level of the Oaks, or 949 feet above the sea or datum line; we then descend to the Werriberri Creek on an inclination of 1 in 60, for rather more than a mile, crossing that creek, which is narrow but deep, on an embankment 60 feet high, containing 86,340 cubic yards of earth. The creek here takes a due southerly direction, so that we are enabled to follow up its course, which is level and straight, through the properties of the Rev. Mr. Hassall, Messrs. Wild, Luther, Inglis, West, and Shepherd, on

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gradients of 1 in 560, 1 in 202, a level, 1 in 90 of 967 yards, and 1 in 173 ascending, when the ascent increases to 1 in 59 of 633 yards, and 1 in 35 of 1,400 yards.

At this point, where the line crosses the road to Burragorang, 15½ miles from the Nepean River, it reaches an elevation of 1,132 feet above the sea.

In Mr. Inglis's land, 13 miles from the Nepean River, I propose forming a station, for the convenience of collecting the produce of the Oaks and Stonequarry districts.

From the Nepean River to this point, we pass through an extremely rich loamy soil, rendered more productive by the quantity of moisture it attracts, from its elevated situation; but we afterwards enter into a very barren broken country, which must be passed through, whatever direction is taken, before the rich country in the neighbourhood of Mittagong can be entered.

It is one of the peculiarities of this country, that the land lies in good and bad patches, very distinctly marked; and in this spot singularly so, as the moment we cross the Crocodile Creek, we enter the barren sandstone formation, that is rendered extremely rugged by the action of the streams and atmospheric influences; however, I have obtained tolerable gradients, by taking advantage of the head of Cedar Creek, which runs in a northerly direction from the lagoons. We pass up its right bank, and find gradients of 1 in 113, 1 in 550, and a level, crossing Crocodile Creek, Jumpers' Creek, Blind Creek, and Toxal Creek, on wooden viaducts, as shown in the plans.

We then descend the Monument Range and cross Cedar Creek, where it breaks into two heads, on a descending gradient of 1 in 50, of 1,767 yards, or about a mile. The crossing of this creek will be performed by means of the rough wooden viaducts before mentioned, a plan of which is laid before you. We then have gradients 1 in 128, 1 in 575, and 1 in 370 ascending, which brings us to the Great Lagoon; on the bank of which, 20 miles from the Nepean, I propose forming a watering station, as from this we ascend a dry barren ridge, where that necessary is not to be obtained.

We commence the ascent by a gradient of 1 in 31, of 1,310 yards, but this may be reduced, if necessary, by increased cutting. We then proceed with gradients of 1 in 115, 1 in 47 of 1,033 yards, 1 in 74 of 1½ mile, 1 in 45 of 1,330 yards, 1 in 950, 1 in 122 of two miles, and 1 in 210, ascending, at which point we have attained an elevation of 1,515 feet above the sea level, and 28½ miles from the Nepean River.

We have now arrived at the foot of the most difficult ascent on the whole line, where the full powers of the engine will be required. It is an incline of 1 in 30 for nearly three miles, which brings us to the height of 2,045 feet above the sea, at a distance of 31½ miles from the Nepean. This is the easiest ascent to the Range, that extends from the coast to Bullio on the Wollondilly River, over which we must pass to reach Argyle. It is an arduous one; but it is my impression that it can be accomplished by a powerful locomotive. It is not capable of being much reduced; but half way up it there is water to be obtained, which may be of great service.

The long ridge that we have been lately traversing, with the Bargo River on our left and the Nattai River on our right, lying in beds 500 to 600 feet beneath us, is connected with this great range by a perpendicular wall of solid sandstone, only 100 feet in width. This wall has ravines on each side of it of 200 feet deep; and it is only by taking advantage of ledges of rock that lie on each side of the wall, and by making a cut through it of between 60 and 70 feet deep, that I have been enabled to procure this gradient.

Should the work be carried out this portion of the line will have a singular and extremely picturesque appearance. We shall find ourselves travelling, at a rapid pace, along the face of a stupendous cliff, towering over our heads on our right; with a deep abyss beneath us on our left, where apparently there is scarcely room for the trains to pass; and in an instant after passing through the rock we shall find the picture reversed, with the cliff on the left and the abyss on the right; and the next moment we shall enter an open grassy plain, where most probably a picturesque hamlet will spring up, the effect of which will be very singular. But this is not the only place where our admiration will be excited; there are many spots of peculiar beauty on the line, among which the descent on the Eurethe Range, with the Blue Mountains, and the sea-coast line in the distance, and the rich valley of the Nepean, studded with farms and cottages, beneath us, takes a prominent place.

After gaining this height, we have 1 in 100, and descend two short gradients of 1 in 44, and 1 in 31, to cross the north head of Bargo River on a similar bridge to that described over the Deep Creek; the height of the structure required here being 100 feet. Passing along a level, we have another arm of Bargo River to cross, which will be effected by an embankment.

These two tributaries to Bargo River form extensive ravines, and it is singular that at the very spot we are obliged to cross them they are contracted by the projection of the cliffs on each side, which enables us to do so without much difficulty; but we are confined within a space of 100 feet. Consequently there are three spots on this line thus limited; and were it not for the facilities which Nature there offers, with however sparing a hand, I consider it would be impracticable to drive a locomotive engine into Argyle. We now ascend another short gradient of 1 in 30, and passing over 1 in 123, and 1 in 161, descend to Chalker's Flat on an incline of 1 in 39, leaving the Sugar Loaf hill on the right.

From Crocodile Creek to this point (20 miles), we have been traversing the barren sandstone country, but as we approach the Sugar Loaf, we again enter the rich lands. This country, although unproductive, has its advantages, as from its structure it is admirably adapted to the formation of railroads; and the ridge being extremely level, the cuttings are very slight upon it, and with the exception of the wooden viaducts, there will be no bridges required, and but few culverts, as the water will descend from each side of the road.

The cuttings on these 20 miles amount to 315,619 cubic yards, averaging 15,781 cubic yards per mile. They are less than on other portions of the line, but more difficult of excavation.

The neighbourhood of Chalker's Flat appears to be a desirable place to form a station for the supply of fuel and water, and for the convenience of the public.

We now commence a gradual ascent to the Gap, in the Mittagong Range, by gradients of 1 in 151, 1 in 74, 1 in 43 of 900 yards, 1 in 85, and 1 in 242, where we cross over the great South Road, at Mrs. Cutter's inn; then a level, and 1 in 36 of rather more than 1½ mile, which brings us to the Gap, which is 2,307 feet above the datum line, or high water level. Here the heaviest cutting on this section of the line will be required, amounting to 92,186 cubic yards.

We now descend through Wingecarribee, the estate of J. Oxley, Esq., on gradients of 1 in 31 of 1,100 yards; 1 in 182, 1 in 326, and 1 in 77, which brings us to the Wingecarribee River at Bong Bong, 44 miles from the Nepean, and 84 miles from Sydney, and at an elevation of 2,157 feet above the sea.

The cuttings between the Sugar Loaf and this point amount to 388,807 cubic yards, averaging 38,888 cubic yards per mile.

There will be two viaducts, one 100 feet and the other 98 feet high in the centre, on stone piers, 11 wooden viaducts, 26 bridges over roads, water-courses, and for accommodation, and 39 culverts required on this section, which will not average one to a mile.

On the banks of the Wingecarribee River, I propose forming a more extensive station, being an equidistant point between the Nepean River and Goulburn, situated in the centre of a very rich agricultural country, within four miles of Berrima, and commanding a good supply of water, which is essential, as there is no doubt that a considerable town will spring up wherever this station is placed.

But we are not confined to this spot, as there is another point that may be fixed upon with equal advantage—that at Sutton Forest—where the line crosses Nicholson's Creek.

From Bong Bong the line passes through the Hutchinson estate, the properties of Messrs. Waite, Nicholson, Wright, Holland, Underwood, Moore, and Gray, where it enters Government land, through a country generally very level.

We ascend gradients of 1 in 466, 1 in 146, 1 in 81 of 1,000 yards; then descend 1 in 76,516 yards, to cross the Midway Rivulet; then ascend 1 in 85,600 yards; when we make a long descent to Nicholson's Creek, on gradients of 1 in 211, 1 in 65 of 633 yards, 1 in 124, 1 in 216 ascending, and 1 in 76 descending, crossing over the Bong Bong Road.

We are here 2,112 feet above the datum line, and $6\frac{1}{2}$ miles from Bong Bong, having descended 195 feet since leaving the Gap, in Mittagong Range. We now ascend to the high land, near Ivy Hall, first by 1 in 75, for about a mile, then descend 1 in 162,433 yards, before taking the steep ascent of 1 in 60, and 1 in 30 of $1\frac{1}{2}$ mile, which brings us to the summit level 2,370 feet above the datum line, and nearly 9 miles from Bong Bong.

But I am not satisfied but that this last ascent may be avoided by taking a direction from Nicholson's Creek more to the right, and not entering Mr. Badgery's land, but leaving it to the left. At all events, this ought to be examined before this part of the line is finally determined on.

We then have 1 in 800, and descend to Black Boy's Creek, by 1 in 53. In this creek there is abundance of coal, of easy access, consequently it will be a desirable place to form a station. It is also in the midst of a very fertile country, and at a convenient distance from Bong Bong, being $10\frac{1}{2}$ miles.

The cuttings here amount to 194,983 cubic yards, averaging 19,011 cubic yards per mile.

The line from hence passes over a very level country for several miles, on gradients of 1 in 61, 1 in 600, 1 in 300, 1 in 135, 1 in 95, 1 in 583, 1 in 100, and 1 in 68, when it is at the height of 2,335 feet above the datum line.

The country now descends considerably to Paddy's River, and we have gradients of 1 in 40 of 1,600 yards; then 1 in 550 for 1,800 yards; then again 1 in 40 of 900 yards, and 1 in $33\frac{1}{2}$ of 1,500 yards, passing close to the Hanging Rock. We here cross the Crooked Swamp, having descended 339 feet; we then make a short ascent of 1 in 47, 450 yards, and continue descending 1 in 50, 1,050 yards to the river.

This I propose to cross three times, on wooden viaducts; but it may be found more economical to keep the right bank, and cut through a bluff of sandstone rock, which lies in our way, crossing the river below it, about $1\frac{1}{2}$ miles from the present crossing of the Great South Road, or of skirting the base of this bluff if the curve is not too great; but these are points of such nice consideration that it is folly to speculate on them till further information of the practical workings of lines is obtained, or till the work has reached this point, as so many changes may take place in the interim.

I have laid the line down as I describe, but it is probable the above deviation from it may be found the less expensive.

Along the bank of the river we are descending 1 in 377; but on crossing we ascend 1 in 175, 1,167 yards; 1 in 67, 467 yards, a level of 267 yards, and 1 in 30, of 1,000 yards, which places us on the top of the ridge, which divides the waters flowing into Paddy's River from those of Night Cap Creek. It is on this ridge that Ward's inn stands.

We then descend 1 in $38\frac{1}{2}$, 1,500 yards, which brings us into the flats of Wingello, which we traverse on gradients 1 in 59, 1 in 81, 1 in 110, and 1 in 185, when we ascend to Mount Otway, following the course of Night Cap Creek, by 1 in 131, 1 in 81, and 1 in 56; here we again cross the Great South Road in a considerable cutting, the amount of which will be 62,641 cubic yards.

At Wingello, the estate of Robert Campbell, Esq., there is a suitable place for forming a station 23 miles from Bong Bong, being a convenient distance from that at Nicholson's Creek, and a desirable position for promoting the traffic of the extensive surrounding country, and the nearest point to the copper mine now opening at Arthursleigh, the estate of Hannibal Macarthur, Esq., M.C. Up to this point the cuttings amount to 240,806 cubic yards, averaging 18,167 cubic yards per mile.

Descending Mount Otway, by a gradient of 1 in 33 of 1,200 yards, and 1 in 90 of 933 yards, we get into the level tract of country in the estate of Major Lockyer, and following up Jeromai Creek, find gradients of 1 in 185, 1 in 131, and 1 in 73, ascending; and 1 in 68, 1 in 264, and 1 in 83, descending; this brings us to Cockmai Creek, on which stands Major Lockyer's residence, and extensive sheep establishment; passing it, we make a short ascent of 1 in 40, and descend to Frederick Vale by 1 in 63; another short ascent of 1 in 96, and descend to the Wollondilly River by 1 in 136.

At this point, which is 36 miles from Bong Bong, I propose forming another station for supplies, and the convenience of this part of the country.

The cuttings on the last 13 miles amount to 207,229 cubic yards, averaging 15,940 cubic yards per mile.

We are here obliged to cross the Wollondilly River, in order to avoid the Towrang Ranges, but that is not a matter of any great difficulty. I propose doing it by means of a bridge of 80 feet span, supported by three lamina ribs, constructed of timber resting on stone piers, the roadway on each side of the river being made good by the wooden viaducts already described.

This description of bridge appears the best adapted to such of our rivers as are subject to great inundations, as where we find it necessary, from the nature of the gradient, to cross them but little above the highest flood mark, any arch turned beneath the road would considerably obstruct the course of the stream, and be subject to injury from the heavy timber carried along by the torrent, but by this construction, the arch being over the roadway, it will be free from danger, and no obstruction offered to the current, with the exception of the piers, which need not be massive, as the top weight they have to carry will be comparatively light, and the wooden viaducts on each side being open, will afford ample space for the passage of the stream.

I lay before you several plans of these bridges, with their estimated cost, but I shall be better able to

Appendix No. 78. judge of their strength when I have had experiments made on a great variety of specimens of our forest timber, which I have had collected for the purpose of taking to England to have examined.

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We cross the river on an incline of 1 in 72, and then find 1 in 50, of 567 yards, 1 in 92, 1 in 121, 1 in 74, 1 in 500, 1 in 141, 1 in 123, 1 in 200, 1 in 84, and 1 in 78, along the left bank, when we again cross it at about half a mile from Towrang Stockade, and keep the right bank on gradients of 1 in 444, 1 in 96, 1 in 200, a level, 1 in 240, another level, 1 in 360, 1 in 210, 1 in 177, when we cross the Mulwarra Ponds, and ascend 1 in 57 to the terminus on Goulburn Plains, within a quarter of a mile of the township, which is 46 miles from Bong Bong, and 132 from Sydney. The elevation of this point is 2,103 feet above the sea level.

The cuttings on the last 11 miles amount to 132,690 cubic feet, averaging 12,063 cubic yards per mile.

On this section there will be 2 lamina bridges, 12 wooden viaducts, 38 bridges over roads, water-courses, and for accommodation, and 45 culverts, averaging about $1\frac{1}{2}$ to the mile.

In laying down these gradients, I have made as little cutting as possible, giving due consideration to the working of the line; they may be nearly all improved by increased expense, and I may find it necessary to alter some of them, particularly on the southern section of the line.

It will be seen that to work the northern section, or that in the county of Cumberland, where the gradients do not exceed 1 in 60, the common locomotive engine is capable of traversing it, with trains attached of from 80 to 100 tons.

To work the middle section it will be necessary to have engines of particular construction, that will ascend the long incline of 1 in 30 at the Wall. With moderate loads, an engine of sufficient power to accomplish this will traverse any other part of the line without difficulty. Our traffic will not be so great for many years as to require heavy loads at this point, and at all times I imagine the down traffic will considerably exceed that to be carried up.

On the southern section there are two places where the inclines are heavier than they generally are on that line—the ascent to Ivy Hall, and the descent to Paddy's River. These I should be glad to reduce, so as to work an engine of less power on this section also, and I am inclined to think this may be effected on more minute examination; but with so extensive a survey as I have had in hand, I have not had time to examine this and some other parts on this section sufficiently; but before the works can possibly reach this point, there will be ample time for more careful investigation.

The following is a table of the average amount of cutting per mile on the whole line:—

	Cubic Yds.
On the Northern Section	19,024 per mile.
On the Middle Section	27,830 „
On the Southern Section	16,295 „
Taking it in detail:—	
From Sydney to Haslem Creek	30,819 „
Thence to Rope's Creek	24,116 „
„ Bellevue	8,555 „
„ Vermont	12,607 „
„ Burragorang	28,830 „
„ the Sugar Loaf, near Chalker's Flats	15,781 „
„ Bong Bong	38,880 „
„ Black Bob's Creek	19,011 „
„ Wingello	18,167 „
„ Wollondilly River	15,940 „
„ Goulburn	12,063 „
Penrith Branch	18,410 „
Camden	24,538 „
Windsor	9,644 „
Parramatta	8,096 „
Liverpool	22,194 „

Having laid down these gradients, and ascertained the amount of cutting required, I have been enabled to make a detailed estimate of the whole, taking each section and each branch line separately. These I now beg to submit to the Committee, accompanied by plans of all the works, with their estimated cost, and the calculations on which it is founded, so that the Committee may satisfy themselves as to the correctness of the result.

On referring to them, I find that the total cost of the whole line, provided we can make use of wooden rails, will amount to 864,000*l.*; and there being 177 miles of line proposed, the average rate will be 2,100*l.* per mile.

In making this estimate, after having allowed freely for everything that I can conceive will be required, with the exception of superintendence, I have allowed 37,514*l.* for unforeseen expenses; and if we can make use of wooden rails, and the money is judiciously laid out, I have no doubt but that sum will cover the outlay. To make doubly sure, however, add an additional 400*l.* per mile, making the estimate 442,500*l.*, or 2,500*l.* per mile, which would provide the large sum of 108,341*l.* for unforeseen expenses, or nearly one-third of the estimated cost.

The cost of the northern section, comprising 40 miles (exclusive of the allowance for unforeseen expenses) is estimated at 74,942*l.*, averaging 1,873*l.* per mile.

The second section of 44 miles amounts to 97,784*l.*, averaging 2,222*l.* per mile.

The third section of 46 miles amounts to 73,009*l.*, averaging 1,587*l.* per mile.

It will be seen that the middle section is by much the most expensive, owing to the cutting being principally through sandstone, and the excess would have been greater, was it not counterbalanced by the paucity of bridges in the barren district.

The northern section is rendered more expensive than the southern, from the additional outlay in entering Sydney, and from that part of the line passing through a more populous country, where a greater number of bridges are required.

The branch line to Penrith of $9\frac{1}{2}$ miles in length, amounts to 17,846*l.*, averaging 1,877*l.* 10*s.* 4*d.* per mile.

The branch to Camden of $10\frac{1}{2}$ miles amounts to 19,029*l.*, averaging 1,812*l.* 5*s.* 8*d.* per mile. But I have no doubt this amount would be considerably reduced by the alteration I propose at Kirkham.

The branch to Windsor of $15\frac{1}{2}$ miles amounts to 20,002*l.*, averaging 1,290*l.* 9*s.* per mile.

The branch to Parramatta of $3\frac{1}{4}$ miles amounts to 8,704*l.*, averaging 2,321*l.* 1*s.* 4*d.* per mile.

The branch to Liverpool of $7\frac{1}{4}$ miles amounts to 15,139*l.*, averaging 1,958*l.* per mile.

As I have for the convenience of separating the expense of each part of the line estimated a like number of engines, tenders, carriages, and waggons to each branch, the cost of them not bearing an equal proportion to the expense of constructing the long and short lines, causes the short lines to exhibit a higher average than is strictly correct, more particularly on the Parramatta branch, where it swells the amount unduly, for in reality the expenses of constructing that line are light, and although it will require locomotive power, still not in the same proportion as longer branches.

All appear conscious that we shall derive advantage from the establishment of railways, but I doubt whether the amount of that advantage is so generally appreciated.

At present our rich lands in the interior are lying waste, for I consider their being used merely for grazing purposes is nothing more. Our small farmers can scarcely exist from the want of a market to dispose of their produce, there being so large a quantity raised in the immediate neighbourhood of their location that there is no sale for it there; and to convey it to Sydney is attended by so much expense, and, what is still worse, so long an absence from their families and farm occupations, that it becomes inconvenient and unprofitable, while Sydney is drawing from Van Diemen's Land, and other places beyond sea, its supplies of wheat, potatoes, and other produce, that ought to come from our own lands, and the money be expended in this country. The indolence and evil habits that this hopeless state of things produces, are destroying the energies of the existing labouring population, and neither offer inducement for exertion nor good example to that growing up.

The larger establishments suffer a yet greater inconvenience, from the difficulty of obtaining conveyance of any kind, particularly in dry seasons, and from the serious loss they sustain from the exposure of their wool and stores, and from other casualties, during the protracted journeys to and from Sydney in wet seasons. Whilst to all classes the exclusion from the metropolis, and almost prohibition of all social intercourse, arising from the difficulties and expense of travelling, are highly detrimental in a religious, social, and political point of view.

The line now proposed will provide a remedy for these evils, greatly facilitate our present means of export, and open up others, that have hitherto not been thought of, from the difficulty of carriage to a shipping port, and will be the forerunner of others of much greater importance and extent, eventually opening to us the markets of Victoria and South Australia, and bringing the whole of the intervening country into active productiveness.

We cannot look at the position of the country lying between Sydney and the southern colonies without being struck with the extreme importance of a railway extending between them; for the whole extent of it is so cut off from the coast by the precipitous nature of the ranges, that its entire produce must be conveyed by such a road; either to Sydney or Port Phillip, for shipment.

No country in the world appears to me to offer greater inducements for the establishment of railways than that traversed by this southern line; the nature of the country is so peculiarly adapted to their construction, from its level character, dry climate, and porous structure, that the cost will be comparatively small.

There are no means of conveyance to compete with it; we have no canals; and our present roads, unformed, unmetalled, and laid out in the worst possible manner, are but make-shifts.

The absence of any fund for the safe investment of capital (proved by the large sum of 85,000*l.* now lying in the Savings' Bank unproductive) will be supplied by one, the stability of which cannot in my opinion be questioned.

The long droughts that we are subject to call loudly for the application of steam power; for when they take place communication is all but cut off, from the want of food for the animals employed on the roads; and what will it be when the country is so occupied that these are fenced in? In other countries a thick population would indicate plenty; but it is not so in this; for when these droughts take place, there is a general failure of crops, as well as native grasses; and if the evil is but partial, the difficulty of conveyance to where the scarcity exists precludes its being remedied.

And, again, the highly prosperous state and unexampled rise of this colony offer the greatest inducement to such a projection; for although we have lately had a severe check, caused by that very prosperity leading us into undue speculations, the ingredients for forming a great nation are still here, undiminished, and nothing but the Divine Will can prevent us, in the order of nature, from becoming one.

But the child must walk before it can run, and, in this instance, I should propose that we do not at first undertake more than the completion of the northern section, or that portion of the line extending from Sydney to the Nepean River, with the branch line to Penrith, comprising $49\frac{1}{2}$ miles, although it will be desirable to form a company for the purpose of eventually carrying out the whole.

This portion will open the communication on the two main thoroughfares 40 miles towards Goulburn, and 33 miles towards Bathurst, and will facilitate the communication with Parramatta, Liverpool, and Windsor, as it will pass within $3\frac{1}{4}$ miles of the former, $15\frac{1}{2}$ of Windsor, and $7\frac{1}{4}$ of Liverpool.

It will also be the easiest of construction, as there are no extensive works upon it, with the exception of the bridge over Parramatta-street and the adjoining viaduct, which may be omitted in the first instance if desirable.

And it will always yield the greatest return, for as I have before said, the main part of the exports of wool, tallow, hides, &c., the wheat, butchers' meat, and other country produce, consumed in Sydney, and the transfer of all the mails and passengers to and from the interior, must pass along it.

And if the iron-bark rail be found sufficient to support the necessary weight without crushing, the easy nature of the gradients relieves us of any apprehension as to the want of power in the locomotive engine, even on wooden rails.

The amount required to carry this out (if wooden rails are used) will be 120,000*l.*, which allows 27,212*l.* over and above what I have estimated for unforeseen expenses, averaging 2,424*l.* per mile.

To meet this expenditure I have made the following calculation of the revenue to be derived from the work, but I have only included those articles respecting which I have positive data to work from; there are many others now conveyed that I have not taken notice of. Had I, instead of calculating from the amount of the present conveyance, made a statement of what that amount may fairly be expected to reach, as soon as the facility of railway transfer is attainable, I have no doubt that the sum total of revenue would be quadruple what I have computed it at. But I have endeavoured as much as possible in this and all other calculations to avoid anything like theoretical conclusions, and to confine myself to statements drawn from existing facts.

Appendix No. 78. AMOUNT of the PRESENT TRAFFIC on the SOUTHERN and WESTERN ROADS, calculated from the Police and Custom House Returns for the Year 1847.

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<i>Wool</i> —Exported, 1847					
Received from Hunter's River	.	.	.	8,000 Bales.	
" Clarence River	.	.	.	2,500	
" Port Macquarie	.	.	.	897	
" Moreton Bay	.	.	.	3,700	
" Other places on the coast	.	.	.	9,613	
				<u>24,710</u>	
Average 290 lbs. per bale		.	.	7,165,900	
Leaving				.	3,989,068
Or 1,780 tons, to be carried 36 miles, at 1 <i>l.</i> 10 <i>s.</i> per ton		.	.	.	£2,670 0 0
<i>Tallow</i> —Exported, 1847	.	.	.	2,356 tons.	
Received coastwise	.	.	.	664	
Leaving 1,692 tons, at 1 <i>l.</i> 10 <i>s.</i> per ton				.	2,538 0 0
<i>Hides</i> —From cattle slaughtered for tallow and inland consumption, 12,525 at 60 lbs. each			335½ tons, at 1 <i>l.</i> 10 <i>s.</i> per ton		502 15 0
<i>Wheat</i> —Consumed in Sydney, at the rate of 7,000 bushels per week			364,000 bushels.		
Received coastwise (not including the Hawkesbury)	.	.	.	89,000	
Leaving				275,000 bushels	
at 60 lbs. per bushel = 7,366 tons, at 6 <i>s.</i> 8 <i>d.</i> per ton, being at the rate of 6 <i>d.</i> per bushel, from Goulburn		.	.		2,455 7 0
<i>Cattle</i> —25,600 head consumed in Sydney, not including those boiled for tallow, at 1 <i>s.</i> 6 <i>d.</i> per head	.	.	.	.	1,920 0 0
<i>Sheep</i> —79,421 ditto ditto, at 3 <i>d.</i> per head	.	.	.	.	992 11 0
<i>Pigs</i> —9,808 ditto, lard at 3 <i>d.</i>	.	.	.	.	122 12 0
<i>Horses</i> —1,000 head, at 2 <i>s.</i> each	.	.	.	.	100 0 0
<i>Hay</i> —2,000 tons, at 10 <i>s.</i> per ton	.	.	.	.	1,000 0 0
<i>Dairy Produce</i> —150 tons, at 1 <i>l.</i> 10 <i>s.</i> per ton	.	.	.	.	225 0 0
<i>Small Parcels</i>	.	.	.	.	500 0 0
<i>Return Supplies</i> —4,000 tons, at 1 <i>l.</i> 10 <i>s.</i> per ton	.	.	.	.	6,000 0 0
<i>Carriage of Mails</i>	.	.	.	.	1,333 0 0
32,000 passengers, at 6 <i>s.</i> each	.	.	.	.	9,600 0 0
					<u>£29,959 5 0</u>

Say 30,000*l.*

And allowing 60 per cent. of this, or 18,000*l.* for working the line, which is double what is usually estimated, we have still 12,000*l.* or 10 per cent. on the whole estimated outlay as a dividend. But, as I have said before, the above is only a moiety of the probable return.

I have, &c.,

THOMAS WOORE.

WEDNESDAY, April 19, 1848.

Present:

CHARLES COWPER, Esq., in the Chair.

William Dumaresq, Esq.

Francis Lord, Esq.

John Lamb, Esq.

Captain Phillip Parker King, R.N., called in and examined.

1. Have you had any experience with regard to railways?—None at all.
2. You have seen, I believe, the plans and surveys which have been made by Mr. Woore, who is a Lieutenant in the Royal Navy, and was formerly engaged in making surveys on Her Majesty's service?—I have, and have looked through them with much attention.
3. Will you favour the Committee with your opinion, as far as you are able to give it, with reference to those plans?—I am aware that Mr. Woore has made some very useful surveys, in India, under the direction of Sir Edward Owen, the Commander-in-Chief, particularly a very elaborate one at Penang; since which I have known him when a lieutenant of Her Majesty's ship "Alligator," on this station. I was with him on board that ship during his survey of Twofold Bay, which was performed in a very correct and creditable manner; and I have every reason to think, from careful examination of his plans now before me, that they are entitled to every credit, and I should confide in them myself as documents of considerable value.

4. Do you think that any opinion which might be drawn from the surveys of Mr. Woore, would be founded, as far as these documents lay claim to consideration, upon accurate data?— I think Mr. Woore would not make any statement that he was not quite satisfied was perfectly correct, and therefore I should place every confidence in what he has stated, and on his skill as a draftsman and surveyor. The levels seem to be very carefully observed. I have seen the instrument which he used, and I am quite sure that any person skilled in levelling, as I believe Lieutenant Woore to be, would make correct surveys with it. I have had an opportunity of testing one particular part of his survey, near Berrima, having measured the same height repeatedly with the barometer.

5. As a colonist of many years' standing, and having considerable experience in colonial affairs generally, would you favour the Committee with your opinion as to whether it would be expedient for the Legislature or Government to entertain the question of the introduction of railways?—As a general question, I think it desirable for the best interests of the colony that railways should be established, but at the same time I would recommend that a short line should be first attempted, to show what would be the expense, the returns, and the advantage.

6. (*By Mr. Lamb.*) And that short line you would recommended to be in the vicinity of the capital?—Yes, in a direction that would serve as a main trunk for any further railways.

7. (*By the Chairman.*) Do you think that the time has arrived when the colony might safely commence such a work with the hope of its being remunerative?—I do, certainly; because I think the establishment of railways would increase the traffic, and therefore the advantages would be doubled and trebled.

THURSDAY, April 20, 1848.

Present :

CHARLES COWPER, Esq., in the Chair.

John Lamb, Esq.
Francis Lord, Esq.

Thomas Icely, Esq.

Francis Webb Shields, Esq., called in and examined.

1. Are you a civil engineer?—I am.
2. How long have you been in the colony?—Since 1843.
3. Do you hold any appointment in the colony at present?—Yes, that of city surveyor; I am at the head of the Survey Department of the Sydney Corporation.
4. How long have you held that appointment?—Since June 1846.
5. Since you have held that appointment you have had considerable experience in performing works in the colony?—I have.
6. In what branch of your profession have these works generally been carried on?—Principally in road-making, town-drainage, and water-works, in which the Corporation are largely engaged.
7. Previous to your coming to this colony were you at all engaged on railways?—Yes; I was bred to the profession of a railway engineer, and was employed for several years on the English lines, with Mr. Vignoles, the eminent engineer, by whom the Midland Counties, North Union, Dublin and Kingstown, Sheffield and Manchester, and various other railways were laid out or constructed.
8. Since you have been in this colony have you turned your attention to the subject of railways, with the view of their being introduced among us?—I have felt much interest in the subject; and as it has excited general attention I have, of course, heard and read a good deal about it, though unable, from the pressure of my official duties, to devote much time to investigate its details.
9. Do you feel competent to express an opinion to the Committee, as to whether the colony is sufficiently advanced to make it expedient to introduce railways into it?—In the immediate neighbourhood of Sydney I am convinced that from the sources of traffic which a railway would command, it would prove remunerative, even if constructed on the costly principles adopted in England. Indeed, any railway offering equal advantages in that country would very soon be constructed. I cannot speak with certainty respecting the interior of the colony, though I should think they would be found to answer there also, if constructed on a strictly economical system, similar to that adopted in America.
10. You think they would be remunerative throughout the main lines of traffic in the interior?—Throughout the main lines of traffic in the interior, if the American system of construction were followed.
11. When you speak of the immediate neighbourhood of Sydney, how far would you consider that description to extend?—I mean as far as Parramatta, where numerous coaches and steam-boats ply already, and where a considerable traffic in the conveyance of goods, merchandise, and cattle, to and from the interior, exists; in so saying, I suppose this line to be the common entrance into Sydney for all the railways through the interior.
12. Do you, or do you not, think it would be desirable that a railroad to Parramatta should be made upon the same principle as the improved railroads in the mother-country?—I certainly should not recommend the adoption of English principles in the construction of any railways in a finished and costly style; but on the line adjacent to Sydney, over which a heavy traffic from every part of the interior would pass, I think that a greater degree of

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strength should be given to the works than that which might be thought sufficient for railways of less thoroughfare, such as those through the remoter districts of America.

13. You have not been in America yourself?—I have not; but, in common with most men of my profession in England, I have been much interested by the accounts of the extensive works of American engineers, and paid a good deal of attention to their system.

14. Have you read the despatch from Lord Grey, recently laid upon the table of the Council, enclosing the reports from the North American colonies upon this subject?—I have.

15. You would not, as far as I understand, recommend the introduction of wooden rails upon the principles there proposed, within the distance of Sydney and Parramatta?—Without trying some experiments it is impossible to say whether wooden rails will answer the purpose. The railway companies of England have found it necessary to increase, time after time, weight and strength of their iron rails, and from the great wear and heavy strain caused by the locomotive engines and trains, I can scarcely conceive that a wooden rail could withstand the effects of a heavy traffic. Moreover, as the power of an engine consists in the pressure or friction of its wheels upon the rail, a serious objection might arise in the diminution of this effect, especially in wet weather, for I have seen the street pavement of this material in London at such times in a very slippery state, though laid with its grain end to the surface. However, I have never seen wooden rails, and can but speak from supposition. If they can be practically applied, a complete alteration from the present shape of both rails and wheels must be made; and I would recommend that, in the course of construction of the line, they should be tried for a short distance wherever, like the railway on the Circular Quay, they might be found useful for the conveyance of earth, stone, or other heavy materials for the works, which would afford as good a test of their capabilities as we could readily obtain.

16. Suppose we take the foundation first: what is your opinion of the merits of the pile system, as compared with others more substantial and permanent?—The pile system where it can be adopted will be peculiarly suited to this colony.

17. Do you see any reason why it cannot be adopted, commencing with the city of Sydney, as well as extending to other parts of the colony?—The only drawback which I fear is, that the soil in this colony is, generally, of too hard and rocky a nature to allow of piles being driven into the ground, otherwise the system will be still better suited to New South Wales, as not only is our timber more durable, but from the mildness of the climate, it will be free from the extreme and constant changes of weather, which, in America, cause its rapid decay.

18. Do you think that, generally, piles could be driven?—As far as I have had the opportunity of judging, I do not think they could.

19. You will perceive in the Report of Mr. Wilkinson, transmitted by the Secretary of State, this passage:—"The manner of construction was upon well-driven piles when the ground was soft, upon trestles when firm and solid, and simply on longitudinal under-sills united by cross-ties, when excavations occurred, or where the grades coincided nearly with the natural surface." What is your opinion with reference to this mode of constructing railroads?—My last answer referred to the pile system. The construction on longitudinal under-sills, united by cross-ties, which is applicable wherever the rails are to be laid upon the ground surface, is the method most approved of in England, as well as in America. It consists in laying blocks of wood upon the ground, at short distances apart, across the direction of the railway, and over these two continuous lines of timber bearers, to form the support of the rails, which are laid upon and along them. The mode of construction on trestles or timber frames, where the hardness of the ground will not admit of piles being driven, is, I think, the most suitable to our circumstances, and in this manner the greater portion of our embankments will probably be made; these frames can be formed chiefly of round timber, and at a very moderate cost, though, as their bearing upon the ground is generally less secure than that of piling, they should, especially in the neighbourhood of Sydney, be strongly framed and braced together, to secure them from being shaken and rendered unsafe by the constant passage of the trains. From the great weight of locomotive engines, and the high velocities at which they travel, their passage is far more trying to the rails and the road than that of any ordinary vehicles; and the frequency of accidents in America is well known, owing generally to their works having been constructed in too slight a manner.

20. Will you state the reason why you think the line from Sydney to Parramatta should be constructed in a stronger manner than other lines further in the interior?—For several reasons. The traffic on this line would be peculiarly heavy, not only from the great increase of travelling, which the inducement afforded by the railway to the inhabitants of Sydney and Parramatta to take short trips for recreation would cause, but from the communication with every part of the interior being carried over it. Then, besides the immediate danger to passengers, an accident on this part of the line would interrupt the communication of the whole interior with Sydney, an inconvenience which appears too obvious to be dwelt upon; and as this would be the best paying portion, the returns would justify a moderate increase in its first cost beyond that of the lines through the remoter parts of the country. Even the Americans themselves, where justified by circumstances, have constructed their railways in a substantial manner.

21. Would you recommend the use of wooden rails only in the roads beyond the Parramatta terminus?—In making the line to Parramatta, I should recommend that the temporary rails, which are used in transporting the soil from the cuttings to form embankments, should be laid with wood. By this means, as I have before suggested, the capability of the wooden rail would be tested by heavily-laden wagons passing over them; and upon this or some similar test I would determine whether it were advisable to use them on the permanent line.

22. From your experience in railways at home, and the traffic which is necessary to make a railway at all remunerative, do you think the Parramatta line would probably give a fair return for the capital likely to be expended in its construction upon the substantial plan you speak of?—I do. By the formation of railways, travelling and traffic is increased to a wonderful extent, and I have no doubt that a cheaply-constructed line would return large profits. I beg to submit to the Committee the following statement, showing the expense incurred in the working and maintenance of railway lines, after their construction, in different parts of the world, which I had the opportunity of procuring in England from various authentic sources. The average of the cost of several years' working and maintenance on the Belgian railways, previous to the year 1842, was 4*s.* per mile per train. On the German railways it was about 3*s.* 6*d.* On the North Union Railway in England (connecting Preston with Liverpool and Manchester), 25 miles in length, and dispatching six passenger-trains besides goods-trains in each direction daily, the cost in the year 1841 was about 3*s.*, exclusive of Government duty and parochial taxes. On the Dublin and Kingstown Railway the traffic of the year 1840, consisting of 136,728 miles run by the trains, cost 3*s.* 4½*d.* per mile per train. On a number of railways in the United States of America, the average cost of working for two or three years, has been 3*s.* per mile per train, some being as low as 2*s.* 9*d.*, wood being the chief fuel. The details of this expense are as follows:—

Cost of locomotive power	.	.	.	s.	d.
„ Carriages	.	.	.	0	3
„ Maintenance of railway	.	.	.	0	6
„ Police	.	.	.	0	2
„ Conducting traffic	.	.	.	0	5
„ Management	.	.	.	0	2
„ Miscellaneous expenses	.	.	.	0	3
Total expense per mile per train					<u>3 0</u>

The calculation of the working cost and the revenue of a line to Parramatta, 14 miles in length, then becomes a simple matter. I have attempted, though unprovided with any precise information of the amount of traffic, to form a rough estimate of the cost of working the line, and the returns derivable from it, which may be stated as follows:—

Cost of Working.		Per Week.
Passenger-trains every three hours, about four from Sydney and four from Parramatta daily, say in all 60 trains per week, running 14 miles each, at 3 <i>s.</i> 6 <i>d.</i> per mile per train		£ 136 10 0
Goods-trains—two in each direction daily, or 24 weekly, for conveyance of goods, merchandize, sheep, cattle, produce, &c., at 3 <i>s.</i> 3 <i>d.</i> per mile per train		56 0 0
Total expenses per week		£ 192 10 0
Revenue.		
Say 30 passengers in each passenger-train, at 1 <i>s.</i> 6 <i>d.</i> each	£ 135 0 0	} 255 0 0
Parcels, light goods, mails, private carriages, &c., say 2 <i>l.</i> per train	120 0 0	
Twenty-four goods-trains, earning a gross amount of say 4 <i>l.</i> each		96 0 0
Gross receipts per week		351 0 0
Leaving a clear profit of per week		<u>£ 158 10 0</u>

or of 8,242*l.* yearly. From this rough calculation it would appear that, speaking in round numbers, a return of 20 per cent. on a capital of 3,000*l.* per mile, or 15 per cent. on a capital of 4,000*l.* per mile expended in the construction of the line, would be obtained. These are of course but rough estimates, and I cannot pledge myself to their accuracy, though I think I have underrated the probable number of passengers that would travel on the line.

23. It appears from the report of Mr. Wilkinson, that “in South Carolina, where the abundance of timber and the favourable character of the country naturally suggested the idea, timber foundations, and also rails essentially of timber, were adopted to obviate the costly alternatives of earthen excavations and embankments, solid masonry, and the heavy iron rail,”—do you not think that the circumstances of this colony are very similar to those of South Carolina, and that we should take into consideration the propriety of forming railways upon the principle suggested in this report?—Certainly. There can be no doubt that we shall find abundance of timber suitable for the construction of the works in a much more economical manner than by heavy cuttings and embankments; and, as a general principle, the cheaper our railways are constructed the better, especially throughout the interior of the colony.

24. You still appear to be of opinion that we ought to construct the Parramatta line in a more substantial manner?—I think so.

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25. (*By Mr. Lord.*) The traffic is almost as great to Penrith as to Parramatta?—But the line to Penrith will not require the entire traffic of the interior to pass over it; and, besides the regular business, the traffic from Sydney alone would occasionally be very great. At times of races or fairs in England I have seen trains dispatched every quarter of an hour, conveying about 200 persons in each; and another important source of revenue to railways leading out of large towns is the occasional conveyance of large numbers of persons for a few miles into the country for recreation, at a low rate, or as it is expressed, in cheap trains. These cheap trains are largely used, especially by the working classes, to whom they afford much healthy enjoyment; and a line which is intended for heavy traffic, such as this, should have sufficient strength to sustain it.

26. (*By the Chairman.*) I would direct your attention to this statement in Mr. Wilkinson's Report:—"During the passage of the train no vibration or unsteadiness was perceptible; and in standing on the platform behind the last car, as it were in mid air, and in clear view of the open wooden framework below, retreating with a velocity of 25 miles per hour, it was not easy to conceive how it could be more difficult to pass any ordinary depth of our northern snow, and that at rates of speed equal to those attainable under the most favourable circumstances." There seems to have been no vibration and unsteadiness to shake the framework upon the line here referred to?—Then the framework must have been substantially put together. I have seen drawings of the American structures, which were wholly unsuited for the passage of locomotives engines, and on which, accordingly, it was stated that accidents had frequently occurred.

27. Can we not have a framework sufficiently substantial?—Undoubtedly.

28. And at a much less cost than by embankments?—At a much less cost, when the timber can be easily procured. In general, where cuttings and fillings are required to level the road, the material taken from the one may as well be used for the other; hence the cost of the cutting is the real expense of the work. On the English lines the cuttings and embankments are equalized, so that one may form the other; here, on the contrary, we would lessen the cuttings, which are the principal cause of expense, and fill the hollows with cheaper structures of woodwork.

29. (*By Mr. Lord.*) Your objection to a slightly constructed framework between Sydney and Parramatta is based upon the drawings you have seen of the American railroads?—Yes; as I before stated, I have understood that accidents frequently occurred on the American railways from the slight construction of their works, and I am merely recommending that the timber frames be placed at shorter distances apart, and be well connected together, which will not add largely to their cost, and will render this system of formation as substantial as any other.

30. (*By the Chairman.*) Do I understand your opinion still to be in favour of iron rails, or do you see any reason to object to the American plan in that respect, that is to say, the entire substitution of wooden for iron rails?—It is impossible to judge of the effect of wooden rails until the experiment is fairly tried. I do not think that the entire substitution of wooden rails appears to have been tried in America. The Report transmitted from the Secretary of State mentions, as I understand it, that wooden rails, covered with a light iron plate, were used, and proved unsuccessful, and it then suggests the adoption of rails entirely of wood, under a modified form: allowing, at the same time, that "the experiments as yet made, though calculated to give a favourable impression, do not conclusively settle the question of the safe application of the wooden rail to the various circumstances of a long line of railway, intended to sustain heavy loads and high velocities;" and heavy locomotive engines also will be required to surmount the steep gradients necessary for railways in this colony.

31. Do you think there would be any steep gradients between Sydney and Parramatta?—On referring to the Report on the table from Mr. Woore, I find that he speaks of some ranging from 1 in 60 to 1 in 91 for considerable distances. To surmount such gradients as these, heavy and powerful engines would be required.

WEDNESDAY, April 26, 1848.

Present:—

CHARLES COWPER, Esq., in the Chair.

Captain Dumaresq.
Francis Lord, Esq.

John Lamb, Esq.

Francis Webb Shields, Esq., called in and examined:—

1. Since you were examined before this Committee on the 20th instant, have you still further considered the subject of introducing railways into the colony, and if so, will you state to the Committee any views which you may now be prepared to express on any branch of this inquiry?—Since my former examination I have further considered the subject, and have come to the conclusion, that with our present limited command of labour and capital, a railway of considerable length could not be undertaken with the prospect of being completed in a reasonable time; but that a line such as that from Sydney to Parramatta might be finished in a short period, say, in two, or from two to three years.

2. Could you state, with any degree of confidence, what amount of labour you think would be desirable to place upon the line of railroad to be constructed between Sydney and Parramatta?—Upon a rough calculation, supposing that it were necessary to cut down and remove to the line about 15,000 or 20,000 trees to form the frame-work and railway, and that the earth-

work would not exceed 25,000 cubic yards per mile, I should think that from 150 to 200 labourers, exclusive of mechanics, would suffice for the construction of the line in two years, or a proportionately lesser number in three years.

3. For what number of mechanics do you think it would afford employment?—The mechanics I suppose to consist for the most part of rough carpenters, of whom there are plenty in the country; they would work for low wages, and with a few superior mechanics to superintend them, would be able to construct the frame-work, using round timber (as I contemplate) in its formation, and little or no sawn stuff, except for the immediate support of the rails. There would also be some masons and other mechanics required, but not enough to affect the market injuriously. I can scarcely state the total number, having no means of knowing the amount of work to be done—perhaps 50 or 60 would suffice.

4. Have you much difficulty in getting labourers of any kind for the works of the City Council?—None whatever; although the rate of wages paid by the Corporation is low, the applications for employment on their works are very numerous, and we can select as many excellent labourers at 3s. per day as we desire. This is accounted for by the fact, that nearly all these men have large families, which renders them unsuitable for country employment, and desirous of obtaining constant work and regular wages in Sydney, even at a low rate.

5. (*By Mr. Lord.*) This employment would not interfere much with the country labour?—I do not think it would, especially if regular supplies of labour be sent to us from England.

6. (*By the Chairman.*) Is it not notorious that there are an immense number of persons hanging about the city of Sydney, who will not be induced to go into the country for any purpose whatever?—I understand that to be the case.

7. Would these persons be willing to be employed on such works as railroads, or other public works, immediately in the vicinity of the city, although they would not add to the labour market in the interior?—They would have no objection to work in the immediate neighbourhood of the city.

8. Do you think they would consider that the maximum distance of the line you contemplate would be too great for them to go to their labour? could they not go to and from their work in the waggons used on the line?—They could come in on the Saturday night, but I scarcely think that they could return that distance from their work on each evening; they might reside at Parramatta, however, when employed in its neighbourhood. It is customary in England, where accommodation cannot easily be procured, to throw up a number of huts immediately adjoining the works for the men to live in. I have myself known of men being employed at a short distance from Sydney, and returning to their home every Saturday night.

9. Have you anything to state to the Committee on the subject of gradients?—I have prepared the following statement of the power of draught of a locomotive engine, calculated by the rules in general use amongst English engineers, which will show the Committee the capability of these engines in drawing trains up steep inclines:—

A locomotive engine of the most powerful construction in general use will draw* loads, exclusive of its own weight and that of the tender,† on steep inclinations as follows:—

On an inclination of 1 in 30 . . .	3 tons.
„ 1 in 40 . . .	10 „
„ 1 in 50 . . .	16½ „
„ 1 in 60 . . .	22 „
„ 1 in 70 . . .	27½ „
„ 1 in 80 . . .	33½ „
„ 1 in 90 . . .	38½ „
„ 1 in 100 . . .	44 „

This calculation exhibits the power of the engine under favourable circumstances, and considerably above its general average in 1843; I have assumed it so, however, to allow for the progressive improvements in the construction of locomotives.

The weight of a passenger-carriage capable of containing from 12 to 18 persons, is, I believe, from two to two and a half tons unloaded; that of a goods' carriage is from one to one and a half tons unloaded, and may be taken, when loaded, at about four or five tons.

As a general rule, I would not recommend the adoption of any gradients too steep to allow a load of from 25 to 30 tons to be drawn up them, with the aid of an assistant engine.

10. (*By Mr. Lamb.*) Have you read a letter from Mr. Bridges, a civil engineer, dated 18th September, 1841, which has been reprinted from the "London Morning Herald," on the subject of wooden railways?—I have.

11. Has that at all altered your opinion with respect to the power of overcoming greater gradients than those which you stated at your last examination were likely to be surmounted?—I see nothing in that Report to induce me to change the opinions which I then expressed. It is impossible to state what the effect of wooden railways may be without practical experiment, and in that paper I see no account of their having been actually tried.

12. Have you seen Prosser's guide-wheels? were they in use when you left England?—They were not in general use; I have never seen them.

13. Are you aware that their introduction has induced the doing away with the flanges on the wheels?—The flange-wheels were in general use on the English railway carriages.

14. Do you not imagine, after perusing those documents, that curves of a much smaller radius may be travelled over than were formerly?—I scarcely think so; indeed the present

* The weight on the driving wheels being taken at nine tons, and the adhesion one-tenth of the weight, which is a large estimate.

† Carriage for conveying fuel and water for the locomotive engine.

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shape of railway wheels, with flanges and bevelled tyres, is adopted chiefly for the purpose of enabling them to pass round curves with safety and ease. I do not think that a broad and level rail, with a wheel tyre corresponding in shape, could possibly be suited for curves, though by bevelling their surfaces inwards they might answer; even with the aid of a flange on every wheel, carriages and waggons will frequently get off the line. In travelling from London to Birmingham, I have seen one carriage in a train displaced, while those on either side of it remained.

15. That was without the application of Prosser's wheels?—With the flanges, but without the application of Prosser's wheels.

16. The wheels were not on separate axles?—They were not.

17. Do you think any benefit is likely to arise from placing the wheels on separate axles, as proposed in the diagram accompanying the letter of Mr. Bridges?—It would be advantageous in passing curves, but I do not think it could be adopted. The Prosser guide wheel does not appear to me an impracticable scheme, but any proposal for making the wheels revolve independently on the axles would certainly prove a failure. The wheels of a railway carriage, travelling at ordinary speed, will revolve more than thrice in a second of time, and with such great rapidity of motion, unless they were connected with the axles in one solid piece, the vibration and wear would be so great, that no dependence could be placed upon them. I have never seen a separate axle on any railway vehicle, though, I believe, the experiment has been frequently tried and failed; and, indeed, the very fact that the plan is never adopted, is sufficient, I think, to prove it impracticable.

18. Will you state what would be the difference of expense, supposing wooden were entirely substituted for iron rails? If the heavy iron rail be employed, the difference of expense would probably be from 800*l.* to 1,000*l.* per mile; but it strikes me, that the American plan of covering a wooden rail with a slight plate of iron, although stated there to have been a failure, should receive a trial in this colony. Our hard wood would afford such a rail a much better support than the soft and compressible woods of America; and were it adopted, three-fourths of the expense I have named would be saved.

19. What do you think should be the limit of the gradients with wooden rails?—That depends on the adhesion which would be found to exist between the engine wheels and the wooden rail, which I have no means of knowing.

20. Have you considered whether with wooden rails greater gradients might not be surmounted than with the iron rails?—I do not think they could. If the wooden rails became smooth or slippery in wet weather, it would be difficult to ascend even a moderate inclination. Speaking generally, I think, a gradient of 1 in 50 can be readily worked by locomotive power, but I should not be inclined to go much beyond this; I think 1 in 45, or, in extreme cases, 1 in 40 is the maximum gradient which I would adopt, unless stationary engines were used.

21. How do you account for the statement made in Mr. Woore's Report, that "the Lickey Incline, on the Birmingham and Gloucester Railway, is a conclusive proof that a gradient of 1 in 37½ for a length of 2 miles 3 chains may be worked by the aid of an engine constructed for the purpose, without serious inconvenience to an extensive traffic?"—Such a gradient is of course practicable, especially with the ample resources of power and other advantages which an English company possesses, but which it would be difficult to command in Australia. It is tasking the engine to the uttermost, and I feel confident that much inconvenience must have been caused from it.

22. Do you think the opinion expressed in Mr. Woore's Report: "First. That gradients of 1 in 50 to 1 in 100 are perfectly practicable to the ordinary locomotive engines with moderate loads. Secondly. That gradients up to 1 in 37½, or higher, may be surmounted by heavy trains, with the aid of an assistant engine of peculiar construction," is applicable?—I do, though, as I have already stated, I would qualify the latter part of it in practice.

23. But you do not think 1 in 30, under ordinary circumstances, could be overcome?—Unless some extraordinary improvement be made in the construction of locomotive engines, I think it would be inadvisable to have gradients of such great steepness, as the loads which could be drawn up them would be so inconsiderable as to render the engines all but useless. The engine might creep up by itself, but it could draw little or no load after it.

24. Have you any information to state to the Committee with respect to the increase likely to take place in the traffic by the establishment of railways?—I produce the Report of the Railway Commissioners of 1838, presented to both Houses of Parliament, by command of Her Majesty, which states as follows:—

"On the Stockton and Darlington line, the passenger traffic, prior to the establishment of the railway, amounted only to 4,000 persons in the year, it now exceeds 16,000.

"On the Bolton line, the average weekly number of passengers is 2,500, whereas the number of coach journeys out and in per week, which the railway has superseded, amounted only to 28, carrying, perhaps, on a weekly average, about 280 or 300 persons.

"On the Newcastle and Carlisle road, prior to the railway, the whole number of persons the public coaches were licensed to carry in a week, was 348, or both ways 686; now the average daily number of passengers by the railway for the whole length, viz., 47½ miles, is 228, or 1,596 in the week.

"The number of passengers on the Dundee and Newtyle line exceeds at this time 50,000 annually; the estimated number of persons who performed the same journey, previous to the opening of the railway, having been 4,000.

"Previous to the opening of the railway between Liverpool and Manchester, there were about 400 passengers per day, or 146,000 a-year, travelling between those places by coaches; whereas the present number by railway alone exceeds 500,000.

"In foreign countries the results arising from the same cause are equally, if not more striking. The number of persons who usually passed by the road between Brussels and Antwerp was 75,000 in the year, but since the railroad has been opened from the former place to Malines, it has increased to

500,000, and since it was carried all through to Antwerp, the number has exceeded 1,000,000. The opening of a branch from Malines to Termonde appears to have added 200,000 to the latter number, so that the passenger-traffic of that railroad, superseding a road traffic of only 75,000 persons, now amounts to 1,200,000."

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I may also add, that railway companies applying to Parliament to procure an Act for the construction of their works, are obliged to show the traffic which will pass over their line; for this purpose they find the existing traffic by sending persons to keep accounts of the number of passengers on the road, and are always allowed to claim credit for double this amount.

25. Will you state your reasons for preferring the Parramatta line to a longer one?—I believe it is undisputed, that the railway should commence at the capital, and there are several reasons for taking it in the first place to Parramatta. We should not, I think, be justified, with our limited command of labour and capital, in undertaking at present a line of greater length; and, looking to the future extension of railway communication through the interior, it would be of great importance to construct a line in the first instance that would return large profits, and create public confidence in these undertakings, for the success of the first large railway in England (the Liverpool and Manchester) had the immediate effect of extending railways through every part of the country, and the same cause may be supposed to operate here; and as the Parramatta line would undoubtedly prove remunerative, and could be completed in a reasonable time with our present supply of labour, it seems to me most advisable that we should commence with it.

26. There would also be a great advantage in having successfully executed a piece of railway, however short?—There would. It would inspire the public with confidence, and afford the greatest inducement to extend railways through the country. At the same time, a line terminating at each end in a large town, will have a much better prospect of success than any other, and if the first undertaking failed, it would be difficult to get up a second.

27. (*By Mr. Lord.*) It is upon that ground you would recommend the railway to Parramatta being constructed in the best manner possible?—I only recommend the Parramatta line to be constructed with sufficient strength to ensure its safety under a heavy traffic. In calculating beforehand the cost of the railway, however, I should be unwilling to take for granted the success of any untried plans, and make the groundwork of the estimates depend upon this. I should prefer estimating on the safe side, and if the line would then be remunerative, it can be undertaken with confidence.

28. (*By the Chairman.*) Still if we can upon correct data ascertain that a construction of simple character suited to our present state has succeeded in America, do you think there is any reason why we should commence upon the more expensive system adopted in the mother-country?—None whatever. Everything that has been tried and succeeded in America I would at once adopt, and I have already stated, that I consider a framework of rough timber sufficient for our purpose, instead of the costly cuttings and embankments used in England. But were I about to invest money in the railway, I should prefer estimating on the safe side; I would therefore commence upon the calculation that we should have to fall back upon iron rails. The wooden rail, and other new plans might be tried, in the mean time, and adopted if found to answer, and if it did not succeed we might then use the iron.

29. The result of your consideration of this matter appears to be that it is not only expedient but quite practicable to introduce railways into the colony?—It is. Where there is neither inland navigation nor good road communication to any extent, and with abundance of materials suitable for the construction of railways, the expediency of introducing them cannot be questioned. I would beg to add to my former statement respecting the increase of traffic which takes place by the establishment of railways, that its annual augmentation after the construction of the lines is always very great—as their resources are increased by extension and branch lines, and the country in their neighbourhood becomes thickly populated. There is one other point to which I would beg to draw your attention. The railways in England which are first carried into principal towns, possess great powers and advantages, as other railways are, obliged to make use of them, paying highly of course to the original line for the privilege. Thus the London and Greenwich Railway was used, at its London terminus, by no less than three other companies, and occurrences of the same nature took place elsewhere, to the great advantage of the lines first constructed. As there will probably be a common entrance into Sydney for the lines to the north, west, and south of the colony, I would recommend that the railway in the vicinity of the capital be constructed, if possible, with colonial funds, and kept in colonial hands, without seeking for aid from other quarters.

WEDNESDAY, May 3, 1848.

Present:—

CHARLES COWPER, Esq., in the Chair.

Captain Dumaresq.
John Lamb, Esq.

Francis Lord, Esq.

Henry Gilbert Smith, Esq., called in and examined.

1. You are a merchant in Sydney?—I am.
2. How long have you been in these colonies?—Twenty years altogether.
3. Have you recently visited England?—Yes.
4. How long is it since you returned?—Three years.

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5. You were one of the first to introduce steam navigation into the colony?—I was.
6. And of late years you have given the subject of railways and internal steam communication some consideration?—I have to some extent.
7. What is your opinion as to the expediency of introducing railways into this colony?—I think they would have a highly beneficial effect, and cause the resources of the colony to be developed to an incalculable extent.
8. Can you state to the Committee any particular reasons for arriving at that conclusion?—From the circumstance of Sydney being surrounded by so much barren country, I think that unless a system of railways be introduced into the colony, the good soils which lie so far from the capital will never be brought into cultivation, and will consequently remain comparatively useless.
9. (*By Captain Dumaresq.*) Without a system of easy traffic?—Yes.
10. (*By the Chairman.*) From your knowledge as a merchant, do you think there is such an amount of traffic in any district in the colony as would pay for the working of a railway?—Certainly.
11. You were one of the Committee appointed at a public meeting to investigate this subject?—I was.
12. Did it occur to you that the information collected by that Committee was generally correct, and supported the opinion you have now given?—Quite so.
13. Could you give the Committee any opinion as to any particular districts in which you think it might be desirable to try the experiment first?—I should prefer a railroad to the southward rather than to any other district.
14. Why do you give the southward the preference?—On account of the probability of a more rapid increase of population between Sydney and Port Phillip than in any other parts of the colony; for I anticipate that a railroad to Goulburn will eventually lead to the important town of Melbourne, and also to the colony of South Australia.
15. Are you of opinion that the amount of traffic between Goulburn and Sydney, provided there were capital and labour in the colony for completing the railway, would pay a fair dividend?—Yes, if the railroad were made upon economical principles.
16. You think it absolutely necessary to go upon economical principles?—I do.
17. Have you read Mr. Wilkinson's Report, transmitted by Earl Grey to this colony?—I have.
18. Are you generally favourable to the scheme of railroads proposed in this Report?—Yes, very much so, for when in England I saw Prosser's guide-wheels applied to a railroad then laid down.
19. What do you think of a wooden railroad, with Prosser's guide-wheels, as adapted to this colony?—I think wooden railroads would answer admirably, either with Prosser's wheels or with the central guide-wheel.
20. Do you think that in the event of a Company being formed for introducing railways into this colony, there would be capital sufficient to commence and complete any given number of lines?—I think a sufficient sum would be subscribed, if the Government were to guarantee 5 per cent. interest for a term of years.
21. What amount of capital do you think could be available for the purposes of railroads with that dividend guaranteed?—I think shares to the amount of 100,000*l.* would be taken, especially if executors and trustees were permitted to invest money in railways.
22. Do you think it would be safe to allow trust moneys to be invested in such an undertaking?—Certainly, with the Government guarantee of a dividend.
23. Have you any doubt in your own mind, judging from what you know of this colony, and what you have seen of railways in the mother-country, of the success of wooden railways here?—None whatever.
24. You think capitalists might safely invest in them?—I think so. There can be no doubt of the security of the investment if the Company were carried out under efficient direction.
25. Have you read Mr. Woore's Report?—I have.
26. As a member of the Committee, can you state whether the members were generally satisfied with the result of Mr. Woore's labours?—I think they were generally satisfied; but my own opinion is, that Mr. Woore is not correct in recommending so many branch lines. It is generally considered that branch lines are worked at a loss, and they are frequently laid down merely for the sake of feeding the main trunk, and of adding to its traffic, though almost invariably at a loss.
27. In what way do you think the object which the Committee had in view could have been accomplished otherwise than by Mr. Woore's suggestion?—I am not prepared to go minutely into the subject, and I merely give an opinion "en passant." I would remark that although it may be desirable to diverge, with the view of obtaining traffic from the country through, or near to, which Mr. Woore's proposed line would pass, too much may be sacrificed to the accomplishment of that object, and it does occur to me, upon consideration, that his line is open to that objection.
28. Have you considered this question with reference to the amount of labour at present available in the colony for carrying it out?—I have; I think the carrying out of this work would in no material degree interfere with the labour which the settlers command, because the men who would work upon the railroad will not go into the interior.
29. (*By Captain Dumaresq.*) You consider that at present there is a considerable portion of labour which could be spared in Sydney?—Yes, particularly among mechanics, bricklayers, and that class; I have talked to several, who are very anxious that a railway should be commenced.
30. (*By the Chairman.*) Are you aware that there are a number of persons within the city

and its suburbs unwilling to proceed into the interior for work, but who would, most probably, accept employment on works of this kind within a few miles of Sydney?—I am.

31. Have you heard any estimate of the probable number of such persons?—Many hundreds, I should say.

32. Do you consider that it would be possible to commence or complete railroads without very materially affecting the supply of labour for agricultural and pastoral pursuits in the interior?—I think that railroads could be made without affecting the labour market to any great extent. I would suggest that as the Government have resumed immigration to the colony, there would always be a number of persons, though not, perhaps, a very great number, who would accept temporary employment before they resolved to proceed into the interior, but who would also be open to employment in that interior, so soon as they should have such offers made them as they might consider advantageous; thus the disadvantages of immigrants upon their arrival remaining without any immediate employment, would be prevented.

33. (*By Mr. Lamb.*) The banks at present pay no interest on the deposits?—No.

34. Do you know the amount of deposits at present in the various banks?—It is upwards of 1,000,000*l.*

35. If the Government were to guarantee 6 per cent. instead of 5 per cent, which you contemplated in a former answer, for a period of ten years, do you not think a very large amount of that would be invested in a railway under judicious management?—A considerable amount might be invested; but, of course, the trading community would always require large balances in the banks.

36. In fact, do not the large balances arise more from the deposits of persons not engaged in commercial pursuits than from those of persons so engaged?—To some extent that is the case, but not to the degree that is generally supposed.

37. Do you think that, with the guarantee spoken of, 100,000*l.* might not be available even without trust funds?—If 6 per cent. were guaranteed, no doubt it would cause a much larger amount to be subscribed to railways than if 5 per cent. only were secured.

38. When you spoke of trust moneys being invested, was it in contemplation of any legislative enactment enabling trustees to invest money in that way?—It was.

39. Do you think that up to the station at Rope's Creek, the deviations from the shortest line are such as would militate against the general success of establishing a railway to Goulburn?—I think they would not. It would be safe to make a railroad to Rope's Creek, even though it should not be continued to Goulburn.

40. Do you think the site fixed upon by Mr. Woore for the first station, a judicious one?—I do not think a station could be fixed upon until the country is more opened.

41. You are decidedly of opinion, from your experience and knowledge of this subject, that a railroad to Rope's Creek would be a paying concern?—Yes, particularly if the best site were fixed upon for its departure from Sydney, as I feel confident that it will lead to the formation of an extended line. I conceive that as this line passes through a thickly wooded country, a considerable traffic in both firewood and timber will arise, which is important in the first establishment of railways.

WEDNESDAY, May 3, 1848.

Richard Wright Goodall, Esq., called in and examined.

1. You are a surveyor?—Yes, I am a civil engineer and surveyor.

2. And have been employed in this colony for some years as such?—Yes.

3. When did you arrive here?—Exactly eight years ago, this day.

4. Previous to coming to this colony, had you any employment in connexion with railways?—Yes, on three lines; on one as far back as 1825, and on the others more recently, the London and Birmingham, and the Grand Junction.

5. How long were you employed on railways?—From 1836; I began on the Grand Junction, and was on and off for about three years.

6. Have you considered the subject of railways with reference to their introduction into this colony?—Yes.

7. Is it your opinion that the time has arrived when they may be safely introduced?—Yes, provided they are not carried on in the expensive way that railroads in England are; the work may be done at a less expense. I refer to the expensive buildings and machinery in England.

8. Do you mean that it would be desirable to have wooden railways here?—Yes.

9. Do you think sufficient traffic is likely to arise to pay for the construction and working of a railroad upon that principle?—It depends a great deal upon the line. If a line were constructed towards Goulburn, I think it would be desirable that it should not be carried further, in the first instance, than the Stonequarry district. The traffic would then be proved, and if it were found profitable, the line might be carried on further. The work could not be carried on in this colony as in England, where various parts of a line are commenced at the same time under different contractors. This would be attended with great expense before any return could be obtained from the outlay.

10. How would you suggest that any Company which might be formed should commence its operations?—From the head-quarters in Sydney, and they could work upwards into the interior; afterwards it might pay to begin at the Goulburn end, for instance, and come on part of the way.

11. (*By Captain Dumaresq.*) After we had tried the experiment in Cumberland?—Yes. I

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think there would be no fear of railroads not paying, on account of the many lines that would enter the main trunk.

12. (*By the Chairman.*) Have you been to Goulburn?—Several times.

13. Are there any engineering difficulties in the way of making railroads between Sydney and Goulburn?—Nothing particular. I have not seen the plans, but I think there are only one or two considerable difficulties, and these could be surmounted by ordinary engineering skill. I have seen much greater difficulties overcome in England.

14. Without cutting?—No. No tunnel would be required on this line equal to either the Kilsby or the Primrose Hill tunnels, between London and Birmingham.

15. (*By Captain Dumaresq.*) Do you think tunnelling would be required at all?—No, I do not. I think with the improvements discovered lately with respect to the adhesion of iron and wood, and doing away with the flange, we could have gradients and curves to avoid the necessity for tunnels; however, some cuttings would be necessary. There is an improvement on Prosser's guide-wheels, that is, the lateral guide-wheels, a sketch of which I now hand to the Committee.

16. (*By the Chairman.*) Have you read the Report of Mr. Wilkinson, enclosed by Earl Grey to the Governor of this colony, respecting the railroads formed from Halifax to Quebec?—Yes.

17. Do you think the suggestions contained in that Report, with respect to the construction of wooden railways, are such as to render them worthy of consideration by any Company to be established for making railroads in this colony?—I think them more adapted than any other to this colony.

18. Do you think the wood of this colony suitable?—There are three descriptions particularly suitable,—iron-bark, black-butt, and spotted gum; provided that spotted gum be barked immediately it is cut, it is very durable wood, but not else. It is used extensively for ship building. Indeed the spotted gum is used almost entirely up the Williams' River for that purpose.

19. Do not these woods warp?—These woods, I think, are less liable to twist in the fibres than any other; besides, they are very plentiful.

20. Is there a lack of supply to any extent?—I think not here; in some parts of the colony they are scarce, but one or other of them are generally found. These, I consider, the three best descriptions on account of not being so liable to twist. If the Kyanizing process be applied to them they will readily take it, even the iron-bark will; I tried it myself some years ago with the solution of corrosive sublimate.

21. (*By Mr. Lord.*) Do you know whether spotted gum is used in Sydney?—I have seen it used for felloes of wheels and poles of drays. It will stand a great deal of twisting and wear.

22. (*By the Chairman.*) Is it at all used in building?—It may be in country places.

23. Is there any probability of its not answering for railways as well as for ship-building?—No. It stands well in the ground; I have seen spotted gum posts and rails that have been in the ground many years (on the South Creek Road, since 1809), in moist situations, without being charred, and are now sound. If the process of Kyanizing be introduced, which I do not see anything to prevent, it might be easily applied to these woods.

24. Did I understand you to say that you thought there were other improvements more suitable than Prosser's guide-wheels?—Yes, the lateral guide-wheel, represented in the sketch, which I consider best adapted for wooden railways; it is cheaper in construction, and the friction and wear considerably less, while it answers all the purposes of the other.

25. Have you had any experience in undertaking any works in this colony?—Not engineering works; there have not been any carried on to any extent since I have been here.

26. Can you give the Committee any opinion as to the probable amount of labour obtainable for railway purposes; do you think, supposing a Company were established to complete a portion of the line within the county of Cumberland, that there is sufficient labour within the city of Sydney and its neighbourhood, without materially, if at all, affecting the supply of labour for agricultural and pastoral purposes in the interior?—There are a great many, but of the number I could not form an opinion, who would take employment on the railway; whether there would be sufficient I do not feel competent to say. If the railway were constructed upon the cheap plan, without those expensive works I alluded to before,—stations, termini, expensive carriages, and so forth,—I think there would be almost labour enough in the country without interfering with the agricultural and pastoral population. As an example, I may state, that no sooner is any building to be erected in Sydney, but there are an immense number of applicants for employment.

27. What rate of wages is paid them?—Bricklayers from 4s. to 5s. a-day; labourers do not get so much.

28. Judging from what you know of railroads in the mother-country, and the experience you have had in the colony, do you think there is sufficient traffic in the county of Cumberland to make a railroad pay?—Yes, provided it be carried on at a moderate expense. I think the American system of piles suited to this colony.

29. Is the soil here suited to it?—Yes. I would first form a main trunk, leaving branches to be formed by local Companies who might wish to take advantage of the main line; that is the system in England.

30. Do you think that persons would generally be inclined to require large compensation for the portions of land the railway would pass through?—I should think the contrary in this colony.

31. You think a large sum would not be required for compensation?—I think not; I think persons would be too glad to have the railroad.

32. Even though there might not be a station close to their land?—Yes; because the

station would not be above 20 miles distant. I do not think any jury would give large compensation; nor do I think there would be a disposition on the part of owners to require it.

33. Have you any further suggestions to favour the Committee with upon this subject?—I have carefully read Mr. Wilkinson's Report on wooden railways, in the Despatch from the Right Honourable the Secretary of State to his Excellency Governor Sir Charles A. FitzRoy, and I consider the remarks therein are exceedingly applicable to this colony. It may be worthy of observation, that in this country we have not to contend with snow, nor with the derangements occasioned by extreme atmospheric influence. I see Mr. Wilkinson, in the ninth paragraph of page 7, alludes to the lateral guide-wheels. I am inclined to recommend that, in the event of a wooden railway being constructed, the rails should be all of iron-bark (*eucalyptus robusta*), as that wood is less compressible than the others I have named. I have also read Mr. W. Bridges' remarks on the subject, and am glad to find that my own opinions agree so well with his.

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FRIDAY, May 5, 1848.

Present:—

CHARLES COWPER, Esq., in the Chair.

Captain Dumaresq.

Francis Lord, Esq.

John Lamb, Esq.

William Walker, Esq., called in and examined.

1. You have been many years a resident in this colony?—Yes.
2. How many years is it since you first came here?—Thirty-five years.
3. You are a landed proprietor and stock-holder?—Yes.
4. Of latter years you have been residing some time in England?—Yes.
5. Before you left England, the last time, were railroads much in use?—Yes, and coming more and more into use.
6. Some of the principal lines were opened?—Yes.
7. Have you given this question consideration since it has been discussed with reference to the introduction of railroads into this colony?—I have given it some thought.
8. I believe you were one of a Committee appointed at a public meeting to take steps in this matter?—I was.
9. As a member of that Committee, and from your general experience as a colonist, will you favour the Committee with your opinion as to the expediency of the Government taking any steps to forward the introduction of railways among us?—I think it most important for the advancement of the colony that the Government should take steps for the immediate introduction of railways into it.
10. Do you think the colonists generally desire their introduction?—I do.
11. Are you of opinion that the time has arrived when the subject ought to be considered with a view to its being carried into effect?—I am.
12. Is it your opinion that the amount of traffic on any particular main line would be sufficient to pay a dividend upon the capital invested in it?—Judging from the statistics which were produced to the Committee, at the time when we took the matter into consideration, I think there would be sufficient traffic on a line to Goulburn, if the railway could be constructed on the scale of expense adverted to in a communication lately received by the Governor from Earl Grey, relative to American railways.
13. Judging from the data upon which that information was given, have you reason to believe that opinion well founded?—I do think it was well founded.
14. You think then that those colonists are not over sanguine who entertain the opinion that the colony ought to begin, at all events, to introduce railways upon some moderate and feasible scheme?—I think they are not.
15. Do you think there is sufficient capital in the colony likely to be available, and which would be subscribed if a Company were formed for the purpose?—That would depend upon the extent of the line.
16. Supposing, for instance, it were considered desirable to make a railroad between Sydney and Goulburn, do you think that the amount which such an undertaking would probably cost might be raised in the colony, within the period during which it would be likely to be called for?—I fear not altogether within the colony.
17. Not even if the Government guaranteed a dividend?—I fear not.
18. Can you state any amount which you think likely to be raised within the colony, provided the Government guaranteed 5 or 6 per cent. for 10 years?—Provided the Government guaranteed a dividend of not less than 6 per cent. for a period of 10 years, I think that for the formation of a line to Goulburn, if it could be constructed on the scale of expense adverted to in the communication lately received from Earl Grey relative to American railways, and already referred to by me, as much as from 100,000*l.* to 150,000*l.* would be subscribed in the colony.
19. Do you think it would be at all desirable for the Government to provide any portion of the funds in conjunction with the Company if it could not be carried without such advance?—Most desirable.
20. Have you ever thought of the supply of labour which would be required for the purpose; and can you state to the Committee whether it would be possible just now to obtain as much labour as would enable a Company to commence operations, perhaps not upon a very large

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scale, at once?—I am of opinion that for carrying on the works within a few miles of Sydney, several hundreds of men might, without difficulty, be engaged to work upon such undertakings, but who would not, under any circumstances, be induced to go far into the interior as shepherds and agriculturists.

21. (*By Mr. Lamb.*) Do you not think that a larger capital than that you have named might be obtained, provided the Government were to come forward with a loan on an issue of scrip under the title of railway debentures, the whole amount repayable say within five years?—Yes; if Government would issue debentures repayable within five years, and bearing interest at the rate of 6 per cent. per annum, I think a much larger sum than I have mentioned would be obtained.

22. Do you not, as a man of business, consider that that would be a very feasible scheme by which the Government could advance such an undertaking?—I do.

23. In the present state of the money market in England, and considering the great sums which have been absorbed in railway undertakings in that country and on the Continent, you do not suppose that any large amount of English capital would be available for a colonial undertaking of this nature?—I think not for some time.

24. Therefore any Company formed for this purpose must rely upon colonial capital, either raised by public subscription or by Government?—Yes.

25. Do you not think it would be desirable, in such a case, to admit of payments for land by these railway debentures, at any time even during that period of five years?—I do not see that that would facilitate the matter much, because if these debentures were bearing an interest of 6 per cent., they would always be convertible into money at par, or even at a premium.

26. Would the possibility of their being always receivable for land prevent their ever falling to a heavy discount?—My idea of them is, that they would be considered desirable investments, and that, therefore, no party would care that they should be so receivable.

27. You mean that they would be immediately convertible into cash?—Yes.

28. You have no fear of their going below par?—Not if they bear 6 per cent. interest.

29. Do you consider that a public debt of this nature, if not exceeding 100,000*l.* or 150,000*l.*, bearing interest at 6 per cent., would be an evil in the colony?—Not at all.

30. On the contrary, would it not possess considerable advantages in many respects?—I think it would be advantageous.

31. Would it not be more advantageous than borrowing money in England, the whole interest of which would be returned to England?—Decidedly, unless the money could be had in England at a considerably reduced rate.

32. (*By the Chairman.*) To make these debentures palatable to the public, you do not think it necessary that there should be any stipulation, with reference to their being receivable at the Colonial Treasury in payment for land, or other purposes?—It would do them no harm to make them so, but I do not think it would increase their value in the eyes of the public. It would be a very good arrangement to have them so; there might be individuals who might find them available in that way.

33. (*By Mr. Lamb.*) You are aware that at present a sum exceeding a million is deposited in the various banks, and bearing no interest?—I believe that is the case.

34. Does not that arise in a great measure from the difficulty of obtaining safe investments at this moment?—I think it partly does.

35. You have seen the despatch of Earl Grey, and the documents accompanying it, with reference to the substitution of wood for iron on the American railroads?—Yes.

36. Do you consider the scheme which has been adopted in America, and which is proposed to be adopted in Canada and New Brunswick, applicable to this colony?—I do, particularly so.

37. Do you think the wood of this colony peculiarly adapted, from its durable nature and close grain, to this purpose?—Yes, certain woods, such as stringy-bark, iron-bark, and some kinds of gum.

38. Consequently the expense of renewal adverted to in that document would be much less here than with them?—Yes.

39. Have you not lately been travelling a considerable distance in the interior?—Yes, in the north-west country.

40. You found the roads in that direction in a very bad state?—Yes.

41. The wear and tear upon a carriage must be immense?—Yes, and upon draught animals.

42. Do you not think, therefore, that a railroad, of the most simple construction, even if only a tramway, would be desirable?—It would be most desirable; even a tramway would facilitate greatly the transit of goods.

43. You do not think speed a matter of great importance in this colony?—Not of such great importance as regularity and security.

44. (*By the Chairman.*) Is it not frequently the case in wet or very dry seasons, that the wages of men during the long period consumed in bringing produce to market, and the casualties among the working cattle, form a very serious drawback to the settler?—Certainly.

45. Do you think, from such considerations as these, coupled with other reasons, that if a scheme were once devised, with any reasonable hope of success, for introducing some method of conveying the produce of the interior to the metropolis, the public would be induced to give it support?—I do think so. I think there is scarcely a stock proprietor or person connected with the interior, having the means, who would not most readily assist to forward such an object.

46. (*By Mr. Lamb.*) Considering the very greatly enhanced value of the Crown lands through which the line of railway, as planned by Mr. Woore, would pass, do you not think

that the increased probability of the sale of these lands would justify the Government in contributing towards the expense?—I do.

47. (*By Mr. Lord.*) You have said, that you think from 100,000*l.* to 150,000*l.* might be obtained, provided the Government guaranteed 6 per cent., do you think, irrespective of Government aid, that that sum might be raised?—I have not seen, nor have the public had before them, a statement of what they might expect as a return from a railroad. I think if it could be shown satisfactorily to the public, that a railroad would give a good dividend, a considerable amount might be raised in the colony, though not to such an extent as you mention.

48. (*By the Chairman.*) Do you think, if immigration be revived, and the supply of labour next year be more plentiful, there is a probability that under the improved state of affairs a Railway Company might be formed to take up a line to the southward?—I fear sufficient capital could not be obtained in the colony alone.

49. Not to commence a line to Penrith on the one side and Camden on the other?—I think those lines could be constructed with the capital in the colony, if the American system with wooden rails and piling were adopted, and the expense did not exceed that mentioned in the communication transmitted by Earl Grey to Sir Charles FitzRoy, already alluded to by me.

50. (*By Mr. Lamb.*) If Mr. Woore completes his northern section, 40 miles from Sydney, at the expense of 80,000*l.*, do you think there would be a probability of a reasonable dividend being payable upon the capital expended?—Yes, under the anticipated improved state of the colony in the course of a few, say two or three, years; I think, at the same time, there should be a branch to Penrith, as being a line from whence so large an amount of produce is receivable.

51. (*By the Chairman.*) Do you not think that it might be desirable to the Bathurst people to have the branch from Rope's Creek to Penrith completed, and that they might, through their own means and interest, make that branch, provided the main trunk to Rope's Creek was made for them?—Supposing that the main trunk line, as laid down by Mr. Woore, is carried out, my opinion is, that the western proprietary would consult their own interest by making a branch line from the Punt to meet it at the nearest point of Rope's Creek.

52. Have you any further suggestions to offer to the Committee with reference to this subject?—I would suggest that the Government should, in the first place, take immediate measures to procure an accurate survey of some of the lines of railway most urgently required here, and an accurate estimate of the cost of constructing them, employing, for this purpose, a competent engineer who has been engaged in similar works in America. The establishment of railroads in this country appears to me to be of such paramount importance to the welfare and advancement of the colony, that I think the Government should employ whatever means it possesses to procure so great an advantage to the community. I am also of opinion, that the property in railroads should remain in the hands of Government rather than be in those of a company of speculators; the traffic on them to be leased to a company or companies, as is done in France.

FRIDAY, May 5, 1848.

The Rev. *Ralph Mansfield*, called in and examined:—

1. You have been a great many years resident in this colony?—I am now in my 28th year of residence in it.

2. Since the subject of railways has been under discussion, have you given the question consideration, as to the expediency of their being introduced into the colony?—I have.

3. Is your opinion in favour of such an undertaking?—Very strongly in favour of it.

4. Will you state to the Committee any reasons which have influenced you in arriving at that opinion?—With regard to the expediency of railways, my conclusions are arrived at from the physical character of the country; the absence of navigable rivers deprives us of the natural means of communication, and we must have recourse to artificial means, either by common roads, by railways, or by canals; and there can be no doubt that of these three methods of artificial traffic, railways are the best. With regard to the practicability of introducing them, I can only speak from information acquired partly by reading and partly in my capacity of member of two successive Committees appointed by public meetings to inquire into the subject. From these sources I have derived information, which proves, to my own satisfaction, that railways may be formed here at a very moderate rate of expense, at a less expense than common macadamized roads; and from my inquiries into the agricultural, pastoral, and commercial resources of the colony, I am quite satisfied, that on certain main trunks, particularly the southern, there exists already an amount of traffic that would secure to the capital invested in such an undertaking a very fair return immediately, and a very splendid return eventually.

5. Is there not also a peculiarity in this colony as to the periodical droughts with which it is afflicted, rendering it, at times, almost impossible to obtain transit of produce from the interior by ordinary means of communication?—Yes; that is another very strong fact, showing the expediency of railway communication in this country.

6. Can you state to the Committee, from your opportunities of communication with residents in the colony, that there is a general desire on the part of the stock-holders, or persons in the

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interior, that some steps should be taken for commencing railways?—Yes; from all my intercourse with my fellow-colonists, I have concluded that the desire of having them is very strong and universal, I never met with an exception; I have heard of exceptions, but I never met with one myself. I never met with a gentleman who was in any degree opposed to the introduction of railways here; on the contrary, every one I have conversed with views their introduction as the greatest of all desiderata for the prosperity of the colony in all its branches.

7. Do you think there is a probability that, if a company were formed, sufficient capital would be subscribed, in the event of the Government affording a guarantee for a dividend at five or six per cent. per annum, for a given number of years?—I think there is.

8. You are secretary to the Gas Company?—Yes.

9. When that Company was first formed the probability of its success was doubted by many persons, I believe?—It was doubted in the first instance by every respectable person with whom I conversed, excepting Mr. A. B. Spark; not only doubted, but by most persons positively denied. They would have it that such a concern would never pay.

10. The lighting of Sydney with gas was considered quite a chimerical idea, when there was no town in any of the other colonies that had arrived at that state of advancement?—It was scouted as a mere flight of imagination. I believe I was for a long time the butt of general ridicule for having started such a wild-goose concern, and that impression on the public mind continued for about three years. The Company commenced in the middle of 1836, that is to say, the preliminary operations commenced; we did not commence lighting until the 24th May, 1841. I was appointed secretary in June, 1836, and all my efforts were directed towards gradually getting persons to subscribe for shares; but the process was so very tardy, that for two years we did scarcely anything; and it was then agreed by the few who had ventured to put down their names as shareholders, that 1,000 shares should be sent to London for sale. The colony was at that time favourably thought of as a place for the investment of British capital, and these 1,000 shares had no sooner been announced, by our London agents, as being for sale, than they were purchased with avidity; and at a subsequent time, 500 more; and even in the colony, when it became known, about the middle of 1839, that the engineer and a large shipment of machinery had arrived from England, such was the sudden re-action of people's minds that there was quite a rush for shares; and in a few days the applications far exceeded the number of shares remaining for allotment.

11. Your Company has, I believe, continued eminently successful up to this time?—Very successful.

12. From your experience in that respect, and judging from other sources of information at your command, do you think it at all likely that a Railway Company will succeed equally well?—I think it would be far more beneficial to the public, and far more remunerative to the proprietors. The object of the Gas Company has always been to keep down profits and not to swell them. Having a virtual monopoly, we have feared to make the profits too great, and our dividends have therefore not exceeded those of the banks, and sometimes have not come up to them. With railroads, supposing engineers to be correct in their estimates, with my own knowledge of the resources of the colony, I feel no doubt that the profits would, ere long, be some 15 or 20 per cent.

13. You stated that you were a member of the Committee appointed by a public meeting?—Yes.

14. That Committee appointed Sub-committees to inquire into the prospect of the formation of railroads in three different parts of the colony—south, west, and north?—It did; it nominated three Sub-committees.

15. Do you know why the Northern and Western Sub-committees never reported?—It never came officially before the General Committee why they did not, but we all understood that the western gentlemen had taken the matter into their own hands, not seeing the necessity for acting as Subs under our Committee. What the issue of their inquiries has been I do not know. With regard to the gentlemen in the northern district, all I heard assigned as a reason for their not inquiring was, that they had already done their part. Some few years ago they had a regular survey made, by a civil engineer, between Newcastle and Maitland, and were satisfied that, between those two points, at any rate, a railroad could be constructed at a very moderate cost.

16. In the present circumstances of the colony, are you of opinion that the formation of a Railway Company would be easily accomplished?—I am not.

17. Do you think that if the Government were to guarantee a dividend it would very greatly facilitate the formation of such a Company?—No doubt.

18. Does anything occur to you that you would suggest as a feasible scheme of Government assistance?—From all the European publications which I have read, both official and scientific, and from the reflections they have suggested, my own opinion is that the formation of railways ought to be undertaken entirely by the Government, both here and in Europe; but as I believe statesmen themselves have not, generally, come to that conclusion as yet, avowedly not in this colony, it would, at present, be useless to attempt to carry out any such principle as that; but I think Government might, and ought to assist by contributing a portion of the required capital, whether by way of loan or as joint proprietors, also by guaranteeing a minimum dividend for a series of years.

19. (*By Captain Dumaresq.*) Would you look upon their giving land as part of the capital?—No, I should not consider that as part of the capital; I believe that is already determined on by the Home Government.

20. (*By Mr. Lamb.*) As a general principle, do you not consider that works of all kinds

are carried on cheaper under the management of individuals than under that of the Government?—That depends upon circumstances; I do not see that it should necessarily be so.

21. Is it not so in fact?—I should doubt whether it is always so in fact.

22. (*By the Chairman.*) Do you not think that the enterprise and spirit of a private Company, if it could be brought to bear, with the advantage of Government aid in pecuniary matters, would be a more desirable mode of carrying out the object in view, than if the Government were to take the work entirely into their own hands?—There are, no doubt, advantages arising from the greater enterprise of private individuals than of official functionaries; but, viewing the question as a whole, I think that the preponderance of good lies on the side of the Government being sole proprietors and sole managers. I do not see why the State, which is a joint-stock company on a larger scale, should not carry on its operations by means of its officers as well as a joint-stock company on a smaller scale by its officers.

23. I believe you are the author of an Analytical View of the Census last taken by the Government of this colony?—I am; and of an Analysis of the previous Census also.

24. Will you oblige the Committee by stating, with a view of showing the increase of population in the colony, any fact which will prove that such an increase is taking place as, if continued, will afford sufficient traffic for the railroads?—Upon comparing the progressive increase of population in this colony with that in other parts of the world, I find some very striking results; for instance, the population of France is computed to double itself in about 88 years; that of the United Kingdom in about 48 years; that of the United States of America in about 30 years; that of the Canadas in about 20 years; while that of New South Wales has, on the average of the last 25 years, doubled itself every 8½ years. During the last 25 years it has increased six and one-third fold. I find, from reference to my Analytical View of the last Census, that the number of persons born in the colony had increased during the previous 18 years by 53,700 souls, or more than sixfold; and during the previous 5 years, from 1841 to 1846, by 33,000, or more than twofold. Within this last period, the increase of the native-born population had exceeded that of persons born elsewhere by 5,200; and it would appear from these returns that the children of the colony, like its sheep, have their numbers doubled in five years. There are other very important circumstances connected with our vital statistics, namely, the proportion of births to marriages, and of births to deaths; the fecundity of married women, and the low rates of mortality. With regard to the former, I find that the proportion of births to 100 marriages is, in England, according to the latest return, 409, while in New South Wales it is 464; and that the proportion of marriages to the whole number of persons living, is, in England, according to the mean of the six years, 1839-44, 77 to 10,000; and in this country, according to the mean of the five years, 1841-45, 129 to 10,000. And with regard to the rates of mortality, I find they are about as follows:—

In Sweden and Denmark,	1 death to 48 persons living.
In England	1 to 47 do.
In Holland and Belgium	1 to 43 do.
In France	1 to 40 do.
In the United States . . .	1 to 37 do.
In Prussia	1 to 36 do.
In Wirtemberg	1 to 33 do.
And in New South Wales, } in 1845	1 to 85 do.

Comparing the deaths of children with the births, in the colony, I find that the mean of the three years from 1843 to 1845, was 13 deaths of children to every 100 births; and in the last two of those years, 12 to 100; whilst in England it is nearly treble, *i.e.*, 35 deaths of children to 100 births. From these three causes, the greater proportion of marriages to the whole population, the larger proportion of births to marriages, and the smaller proportion of deaths of children to births, it will be found that in New South Wales, irrespective of immigration—irrespective, too, of the low ratio of mortality amongst adults, there results a natural increase of population exceeding that of England, almost beyond comparison. The operation of these facts may be illustrated in some such way as the following:—

The net addition given to the population by the proportion of births to each 10,000 persons living (5,000 males and 5,000 females), and by the excess of births over the proportionate number of deaths of both children and adults, in one year, in this colony and in England respectively, was as under:—

NEW SOUTH WALES, IN THE YEAR 1845.			
Births to each 10,000 persons living	.	.	493
Deaths to do. do.	.	.	118
Net addition to the population	.	.	375
ENGLAND.—MEAN OF THE SIX YEARS, 1839-1844.			
Births to each 10,000 persons living	.	.	321
Deaths to do. do.	.	.	219
Net addition to the population	.	.	102
Difference in favour of New South Wales			273

Appendix No. 78.

Railways in
Australia.

I have taken, for New South Wales, the last year in the series, rather than the mean of the last five, because I find that throughout those five the ratio of births had steadily increased, while that of deaths had as steadily diminished; thus—

To 10,000 persons living.		
Years.	Births.	Deaths.
1841	378	198
1842	424	168
1843	462	137
1844	483	120
1845	493	118

I beg to hand in a few tables, showing the actual progress of the population in the localities connected with the proposed railway between Sydney and Goulburn. [*See Appendix.*]

25. Supposing that a good stream of immigration, as at present contemplated, be kept up in future years, do you think the increase of the population of the colony will be not less rapid than it has been during the years you have mentioned?—In reply to that question I should remind you, that the great increase of our population heretofore has been, in spite of the greatest of all obstacles to any increase at all, the inequality of the sexes; and, therefore, if the future immigration consist of a fair proportion of males and females, the future increase will be immeasurably greater than the past.

26. Do you consider that in the more settled districts of the colony, within the county of Cumberland, for instance, the amount of the passenger-traffic, as affording rapid means of communicating with the metropolis, would, of itself, be a very considerable item in the receipts of a Railway Company, exclusive of what might be derived from produce, which would be brought down from the far distant interior?—I am convinced of it, and I may mention that travelling in this country, or at least in the county of Cumberland, is performed by many classes of persons for purposes of pleasure as well as of business. I have every reason to believe that the latter is on the increase, that there is a growing desire on the part of the population of Sydney and its suburbs for recreation and holiday jaunts. They go in cabs, hired for a day, or a couple of days or more, from Sydney to Camden, &c. Camden seems to be becoming to the people of Sydney something like Richmond to the Londoners. I feel satisfied that such is the disposition of the people of this country, in the more populous districts, and especially in Sydney, to make excursions for health and amusement, that a far larger proportion of persons would travel by railway for that purpose than in England. The desire for pleasure of that kind is greater in consequence of the peculiar blandness of the climate, while there is a more general ability to afford the cost of its indulgence.

27. You have attended the meetings of the Committee of which you are a member pretty frequently?—Very frequently.

28. And have been present at most of the discussions held?—I have.

29. Is the result of these discussions upon your mind such as to bring you to the conclusion that the more the question is discussed and understood, the more the public feeling will be in favour of it, or otherwise?—I am convinced from all I have seen in the Committee, that the more it is discussed and understood, the greater will be the feelings of interest on the part of the public in the prosperity of the railway scheme.

30. Is it your opinion, with the prospect which the colony has of a regular introduction of labour, and the absence of any desirable means of investing money, either in anything like a public debt, or in the English funds, that, provided a Company were formed in which the public had confidence, the undertaking, if once commenced, would be likely to succeed?—I have no doubt that even now there are very large sums of money in the hands of individuals here which they have no means of investing. I have experienced that myself, as executor, having had in my hands very large sums of money, thousands of pounds, which I did not know what to do with, and they have lain for years in the banks without yielding one farthing interest; and I have no doubt that as the colony improves, the superabundance of money will increase. I see no increasing means of investing savings, although the colony abounds with means of investment for those who follow up the pursuits in which the money is employed; yet for savings I do not see any investment. The Savings' Bank heretofore has given an interest scarcely worth receiving, and is so restricted in the amounts it would receive upon deposit, that it does not come within the scope of what I am referring to. I do not see any means by which industrious people when they have saved a few scores or hundreds of pounds can put it out to interest. The railway undertaking would afford such means of investment, and, as soon as its advantages became understood by the people, I feel satisfied there would be no lack of money, or, at any rate, that the colony would be able to contribute its own fair proportion of capital to the undertaking.

31. Would you feel justified, as an executor, in investing funds in a Railway Company?—That would depend upon the directions of the testator; if he had left me a discretion, I should have no hesitation at all in investing money in such a Railway Company as that which I contemplate to be the first introduced into this colony.

32. Is it your own opinion that it would be a safe investment for trust moneys, provided the law permitted a person to invest without holding the trustee liable for casualty which he could not foresee?—Yes.

33. Do you think, from your knowledge of scientific and professional men, that the colony affords the materials in this respect for carrying out such an undertaking?—I think, so far as complete professional education and competent professional ability go, the colony has men in abundance; but I have reason to think, that most of these gentlemen happen to be wholly inexperienced in railway operations. A number of them were brought before our Committee and

examined at some length, and nearly the whole, if not the whole, professed themselves to be quite inexperienced in practical railway operations.

34. This Committee has had gentlemen before it who have been employed on railways in England; but, speaking generally, do you think, as to engineers and persons of that class, if the colony does not afford at present these materials, there would be any difficulty in obtaining them, if it became known that the colony afforded a desirable field for their employment?—I should think not. I do not know how the proportion between supply and demand in that particular species of employment holds just now in England, therefore I am incompetent to say; but it is very certain that the formation of railways in England cannot be eternal; the time must come when they can make no more, when they will be stopped by the bounds of that “tight little island.”

Appendix No. 78.
Railways in
Australia.

APPENDIX REFERRED TO.

POPULATION of the Police Districts which would supply Traffic to the proposed Railway between Sydney and Goulburn, with Branches to Penrith, &c.

POLICE DISTRICTS.	Population.		Increase per Cent. in the Five Years.
	1841.	1846.	
Sydney	35,507	49,630	39·78
Parramatta	10,052	9,400	Decrease.*
Liverpool	6,806	8,213	30·24
Campbell Town.			
Stonequarry.			
Picton			
Camden and Narellan	4,044	4,210	4·1
Illawarra			
Berrima			
Goulburn			
Braidwood	1,100	1,320	20·
Broulee	1,686	2,360	39·98
Queanbeyan.			
Yass.	1,281	2,187	70·73
Windsor.	6,465	7,721	19·43
Penrith	3,548	4,120	16·12
Hartley	798	1,365	71·05
Bathurst	3,667	6,647	81·27
Carcoar	1,018	2,057	102·06
Wellington	451	841	86·47
Mudgee	710	955	34·51
Total	81,818	108,185	32·23

* Owing to the breaking up of the female factory and other convict establishments, and consequent withdrawal of troops.

POPULATION of the City of Sydney at each Census during the 18 years, 1828—1846.

YEARS.	Population.	Increase per Cent. since 1828.
1828	10,815	
1833	16,232	50·89 in 5 years.
1836	19,729	82·42 „ 8 „
1841	29,973	177·14 „ 13 „
1846	38,358	
Including suburbs }	45,190	317·85 „ 18 „

The population of the city has about doubled itself within the following periods:—In the eight years from 1828 to 1836; in the eight years from 1833 to 1841; and in the ten years from 1836 to 1846.

During the last eighteen years, including the suburbs, it has more than quadrupled itself.

The present population of the city (1848), not including the suburbs, is more than one-fifth of the whole population of the colony.

POPULATION OF THE TOWN OF GOULBURN.

The first census at which Goulburn appears in the list of towns is that of 1841.

Population in 1841 655
„ 1846 1,171

Increase in the five years . 78·78 per cent.

Appendix No. 78.

Railways in
Australia.Office of Commissioners of Railways, Whitehall,
January 18, 1849.

SIR,

I HAVE been directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 11th instant, requesting them to favour Lord Grey with their opinion upon the mode proposed by the Legislative Council of New South Wales for encouraging and facilitating the construction of railroads in that colony, and forwarding copies of the documents connected with the subject.

The Commissioners have carefully considered the several recommendations contained in the address presented to the Governor of the colony by the Legislative Council on the 13th of June last, viz.: 1st. That a grant of Crown lands should be made to any Company incorporated by an Act of the Council, not only for the construction of the line, but also to a limited extent, of other portions to be selected by the Company, as it is stated, has been done in the American colonies. 2ndly. That a dividend of 6 per cent. per annum should be guaranteed by the Legislature on the first 100,000*l.* subscribed by the shareholders, security being taken by the Government upon the tolls collected by the Company; and 3rdly. That a part of the savings' bank deposits, not exceeding 30,000*l.*, should be invested in the shares of the Company.

With reference to the first of these recommendations, the Commissioners are of opinion that it would not be expedient to allow a railway Company to possess any important amount of property upon their line, with the exception of that which may be necessary for the perfect transaction of their business as railway proprietors. So long as their property is limited to the railway, their interest in the development of the resources of each part of the district which it traverses will most probably be the same with that of the public generally, and free from any "tendency" to favour particular localities. This will not be the case if they are allowed to be extensive owners of property on the line. If, in order to encourage the construction of railways in the colony, it be necessary to hold out as an inducement to Companies to undertake them, a share in the additional value given to the Crown lands in their neighbourhood, this should be done without making the Companies proprietors of any part of those lands beyond that required for their respective lines; and it does not appear to the Commissioners that there would be any difficulty in making such an arrangement. They therefore consider that even if a precedent has been afforded by a grant of land in the manner alluded to, in North America, this course should not be adopted in Australia, an opinion in unison with that expressed in their letter of the 3rd of June last on a similar subject, and referred to in your communication.

With respect to the 2nd recommendation, the Commissioners regret that they find some difficulty in completely understanding its intention. They do not perceive how an effective guarantee can be given by the Government to a Company, and at the same time, that the Government shall be secured by the tolls of the Company; and as the expediency or inexpediency of a Government guarantee must depend almost entirely on the details of the terms upon which it is given, and on the mode by which, if any, payments are to be made under it, the money for such payments is to be raised; they are unable to give any satisfactory opinion upon this suggestion, but they consider that the terms of a guarantee should not be such as can tend in any way, or under any circumstances, to diminish the interest of the Company in completing the whole of their original scheme, or in properly working the line afterwards.

With reference to the 3rd recommendation, the Commissioners are unacquainted with the peculiar circumstances of the savings' bank alluded to, but it appears to them that shares in a newly formed railway Company are not likely to prove a proper investment for the deposits in a savings' bank.

I am instructed to add that the Commissioners have perused the printed Report of the Select Committee on Railways, forwarded with your letter, and that it does not appear to them to contain sufficient information to enable any one in this country to judge of the expediency of employing capital in the construction of railways in New South Wales; and that they believe the mode in which the Home Government could at present render most assistance to the colony on this subject, would be by directing some competent person who could not be biassed by his interests in making a report, to report what line or lines of railway it would be most advisable to construct first, to form estimates of their probable cost and of the amount of traffic likely to fall upon them, and to trace, to the best of his judgment, their probable effect upon the colony generally.

I have, &c.,

H. Merivale, Esq.,
&c. &c.H. D. HARNESSE,
Capt. Royal Engineers.

REPORTS RELATING TO COLONIAL RAILWAYS.

APPENDIX No. 79.

Appendix No. 79.

QUEBEC AND HALIFAX RAILWAY.

Quebec and Halifax
Railway.

SIR,

Colonial Office, May 15, 1849.

I AM directed by Earl Grey to transmit to you, for the consideration of the Commissioners of Railways in this kingdom, the accompanying copy of a Despatch from the Lieut.-Governor of Nova Scotia, inclosing an Act passed by the Legislature of that province, entitled, "An Act to enable the Commissioners for Erecting and Building the Trunk Line of Railway from Halifax to Quebec, to construct the same within this Province," together with Addresses from the Legislative Bodies on the same subject; and I am to signify Lord Grey's wish to be favoured with the opinion of the Commissioners of Railways on this Act.

I have, &c.,

Capt. Harness, R.E.,
&c. &c.

HERMAN MERIVALE.

SIR,

May 23, 1849.

I AM directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 15th instant, in which you transmit, for the consideration of the Commissioners of Railways, a copy of an Act recently passed by the Legislature of Nova Scotia, entitled, "An Act to enable the Commissioners for Erecting and Building the Trunk Line of Railway from Halifax to Quebec, to construct the same within the limits of this Province." And I am to acquaint you in reply that, agreeably to the request of Earl Grey, expressed in your letter, the Commissioners have proceeded to consider this Act, but that they have not any observation to offer on its provisions, which appear to them well adapted for effecting the acquisition of the land within the province of Nova Scotia, that may be required for making the proposed railway from Halifax to Quebec, in the event of that design being carried into execution.

I have, &c.,

H. Merivale, Esq.,
&c. &c.

H. D. HARNESSE,
Capt. Royal Engineers.

NEW BRUNSWICK RAILWAY.

New Brunswick
Railway.

SIR,

Downing-street, June 13, 1849.

I AM directed by Earl Grey to transmit to you, for the consideration of the Commissioners of Railways in this country, two Acts passed by the Legislature of New Brunswick, entitled, No. 1,877, "An Act further to facilitate the making of a Railroad from St. Andrew's to Woodstock, with a Branch to St. Stephen," and, No. 1,879, "An Act to Incorporate the St. John and Shediac Railway Company;" and I am to signify Lord Grey's wish to be favoured with the opinion of the Commissioners on these Acts.

I also enclose extracts from the Lieut.-Governor's Despatch on the subject of these laws, from which you will perceive that it is of importance to the parties interested that Her Majesty's decision should be made known in the province with as little delay as possible.

I am, &c.,

Capt. Harness, R.E.,
&c. &c.

HERMAN MERIVALE.

EXTRACTS from a DESPATCH from Sir EDMUND HEAD to Earl GREY,
dated May 14, 1849.

"THE Act No. 1,879 is an Act to incorporate the St. John and Shediac Railway Company. Next to the great trunk line this railway would be the most important in the province. It would connect the waters of the Gulf of St. Lawrence with the city of St. John; and it would traverse a tract of country of great fertility, and for the most part well cultivated.

"In the event of the great trunk line being constructed, it would form a branch uniting the line with the city of St. John.

"The Act No. 1,877 is intended for the encouragement of the St. Andrew's and Quebec Railway Company. I believe that its provisions are such as to promote the construction of the railway, and the *bonâ fide* settlement under proper securities of the lands in its vicinity. I will only add that the Company are anxious that Her Most Gracious Majesty should be advised to consent to the Act with as little delay as possible, in order that they may know the footing on which they stand during the present.

Appendix No. 79. SIR,

June 30, 1849.

New Brunswick
Railway.

I AM directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 13th instant, in which you transmit, for the consideration of the Commissioners, two Acts passed by the Legislature of New Brunswick, entitled, No. 1,877, "An Act further to facilitate the making of a Railroad from St. Andrew's to Woodstock, with a Branch to St. Stephen," and, No. 1,879, "An Act to Incorporate the St. John and Shediac Railway Company;" and I am to acquaint you, for the information of Earl Grey, that, in conformity with his Lordship's request conveyed in your letter, the Commissioners have proceeded to consider these Acts, and have made the following observations on their provisions.

The object of the Act No. 1,877 is to authorize the grant to the Company of all Crown lands within five miles on each side of the railway, free of all charge except the expense of the survey; such land to be granted in portions of 10,000 acres for every 10,000th paid up and expended in the construction of the railway.

This grant will be in addition to the grants of land for the line of the railway and the site of stations, and of 20,000 acres in lots of 100 acres, at regular distances along the line of the railway, which are authorized by the former Act for facilitating the making of the railway. [*See Printed Correspondence on the Construction of Colonial Railways, H.L., 1847, p. 142.*]

It appears to the Commissioners, that there may be some objection to conferring on the Railway Company the power of holding land to so great an extent as is now proposed. According to the rule laid down by the Houses of Parliament, the grant to a Railway Company of powers for purposes distinct from their railway undertaking is in general prohibited, and is not allowed without a particular inquiry into the circumstances of the case, and unless special grounds are shown for admitting the exception. The effect of the Act now under consideration would be, to add to the proper business of the Railway Company that of a Company for the sale of land and the settlement of the country contiguous to the railway. It is a question entirely for the consideration of Lord Grey, whether powers of this kind can be intrusted to the Company, consistently with the principles acted upon by the Colonial Department in reference to these matters. At the same time the Commissioners would suggest, that in those parts of the district traversed by the railway where the whole or the greater part of the land is still in the hands of the Crown, the proposed grant, by enabling the Company to obtain the exclusive possession of so large a tract of land, including the sites of the towns and villages near the railway, might tend to establish a monopoly prejudicial to the interests of the colony. It would also have the effect of making over to the Company the advantage of any additional value given to the land by the construction of the railway, and might thus prove to be a surrender to the Company of the principal pecuniary benefit the colonial revenue can derive from the railway.

With reference to the other Act, No. 1,879, the Commissioners have the following observations to offer:—

In the 1st section provision is made for submitting the Company's bye-laws to the Governor of the province for his approval; but no power is reserved (as in the Imperial Act for the Regulation of Railways, 3 and 4 Vict., c. 97, s. 9) of disallowing the bye-laws at any future time after they shall have come into operation. And this power appears to be necessary for the completeness of the control over the Company's bye-laws intended to be vested in the Governor, who would otherwise have no power of suspending the operation of a bye-law that was found to be objectionable.

By section 5 the Directors are authorized, until the railway is completed, to pay interest to the shareholders on the amount of the calls paid up by them. In a former Report on a New Brunswick Railway Act, containing a similar provision, the Commissioners took occasion to observe, that provisions of this kind were at one time frequently inserted in English Railway Acts; but in the session of 1847 a resolution was passed by both Houses of Parliament (which has since been adopted as a Standing Order) requiring the insertion in every Railway Bill of a clause prohibiting the payment of interest out of capital; and it might, therefore, be worthy of consideration, whether the reasons that led to that resolution were equally applicable to the colony.

Section 32, after providing for the level crossing of roads by the railway, authorizes the Company, "in case it shall be more conducive to the public safety," to substitute a bridge over or under the railway for the level crossing. It appears to the Commissioners that it would be advisable that a matter of so much importance to the public should not be left entirely to the discretion of the Company, but that power should be reserved to the Governor of the province, or some other responsible public officer, of requiring the Company to make the alteration which the increase of traffic on the roads arising from that on the railway may hereafter render necessary, although at present a level crossing may be allowed without danger.

The Commissioners have also to observe, that this Act does not contain any scale of maximum charges to be made by the Company for the conveyance of passengers and goods on the railway. And this defect does not appear to be remedied by the power of revising the tolls and the option of purchasing the railway reserved to the Government by the 40th and 41st sections. The exercise of those powers is made dependent upon the event of the Company's profits exceeding a certain rate per cent. on their capital. In previous communications addressed to the Colonial Office, the Commissioners have stated that, although such provisions may have been introduced into Colonial Railway Acts for the purpose of thus intimating the possibility of future revision and purchase, yet, in their opinion, it may be questionable whether they can have any other practical effect.

In the absence of any general legislation on the subject of railways in this colony, it is

necessary that every New Brunswick Railway Act should contain within itself the whole of the provisions that are considered to be requisite for the due protection of the public interests. In the present Act there are enactments providing for the conveyance of the mails and troops, and for laying down an electrical telegraph on the line of the railway. But of the other matters which in this country have been made the subject of general regulation with a view to the public safety and convenience, the Commissioners would particularly observe, that the Act now under consideration does not contain any provisions similar to those of the imperial Acts relating to cheap trains, the appointment of inspectors, the opening of railways after notice and inspection, and returns of traffic and accidents.

I have, &c.,

H. Merivale, Esq.,
 &c. &c.

H. D. HARNESS,
 Capt. Royal Engineers.

Appendix No. 79.

New Brunswick
 Railway.

TORONTO, SIMCOE, AND LAKE HURON UNION RAILWAY.

SIR,

Downing-street, July 14, 1849.

I AM directed by Earl Grey to transmit to you, for the consideration of the Commissioners of Railways in this country, an Act passed by the Legislature of Canada, entitled, No. , "An Act to Incorporate the Toronto, Simcoe, and Lake Huron Union Railroad Company."

And I am to signify Lord Grey's wish to be favoured with the opinion of the Commissioners on this Act at as early a date as may be practicable.

I am also to transmit, for the information of the Commissioners, a copy of the Report drawn up by the local Attorney-General, upon the subject of this Act.

I have, &c.,

Capt. Harness, R.E.,
 &c. &c.

HERMAN MERIVALE.

Toronto, Simcoe,
 and Lake Huron
 Union Railway.

SIR,

July 24, 1849.

I AM directed by the Commissioners of Railways to acknowledge the receipt of your letter of the 14th instant, in which you transmitted, for the consideration of the Commissioners, a copy of an Act recently passed by the Legislature of Canada, entitled, "An Act to Incorporate the Toronto, Simcoe, and Lake Huron Union Railroad Company;" and I am to inform you, in reply, that the Commissioners observe that, by the 52nd clause of the Act, its provisions are subject to those of the General Act relating to Railways, which, it is stated in the Report of the Attorney-General of the province, has been passed in the present session. It appears to the Commissioners, that an inspection of the contents of this General Act, which are only briefly referred to in the Attorney-General's Report, is necessary for the due consideration of the Act for making this railway. But understanding that a copy of the general Act cannot at present be obtained, and that the papers transmitted in your letter are now required at the Colonial Office, the Commissioners direct me to return them to you, and at the same time to express their readiness to consider this Railway Act, when the copy of the General Act shall be received.

I have, &c.,

H. Merivale, Esq.,
 &c. &c.

H. D. HARNESS,
 Capt. Royal Engineers.

APPENDIX No. 80.

Appendix No. 80.

REFERENCES OF DISPUTES BETWEEN COMPANIES HAVING CONNECTING LINES.

East Lancashire Railway Act, 1849, 12 and 13 Vict., c. 74, s. 23.

[Disputes as to the nature and amount of the security to be given by the East Lancashire Railway Company to the Proprietors of the North Union Railway, for the payment of the expenses of the station at Preston, referred to the decision of the Commissioners.]

And whereas it is by the East Lancashire Railway Act, 1847, (Preston Extension,) enacted, that the expenses attending the general management, regulation, and control of the said station (the same having in the first instance been disbursed by the proprietors of the North Union Railway) shall be apportioned between the said proprietors and the East Lancashire Railway Company, and be paid and allowed by, to, or between them respectively, according and in proportion as arbitrators appointed as in the said Act mentioned may decide, if the same parties do not otherwise agree: Be it enacted, That the committee of management hereinbefore appointed shall disburse the same expenses in the stead of the said proprietors, subject to the same means as are in the said Act mentioned for determining the proportions of expense to be borne by the said parties respectively touching the said general management, regulation, and control of the said station; and that the Lancashire and Yorkshire, the London and North Western, and the East Lancashire Railway Companies shall from time to time, upon demand hereof by the said committee of management, pay to the said committee the amount due

As to disbursements
 of expenses of
 managing Station.

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Manchester, Sheffield, and Lincolnshire Railway Act, 1849, 12 and 13 Vict., c. 81, s. 163.

[Differences as to the sufficiency of the accommodation to be afforded for the traffic between the Manchester, Sheffield, and Lincolnshire Railway, and the Great Northern Railway at the point of Junction of the Newark Branch of the former Railway with the latter at Sutton, are to be determined by the Commissioners, or an Engineer appointed by them.]

As to Stations at Sutton.

And with respect to the said Newark branch, be it enacted, That the Great Northern Railway Company shall erect at the point of junction of the said Newark branch and Great Northern Railway in or near the parish of Sutton-upon-Trent a good and sufficient station for the booking and accommodation of passengers and goods and the stopping of trains, and shall give every reasonable facility to the traffic between the Manchester, Sheffield, and Lincolnshire Railway and the Great Northern Railway, subject, in case of difference between the said Companies with regard to the matters aforesaid, to the award of the Commissioners of Railways, or of any engineer to be appointed by them for that purpose.

Lancaster and Preston Junction Railway Amendment Act, 1849, 12 and 13 Vict., c. 87, s. 39.

[Regulations with regard to the crossing of the Lancaster and Preston Junction Railway by the Fleetwood, Preston, and West Riding Junction Railway, to be made by the Commissioners.]

As to the toll to be taken from the Fleetwood, &c., Railway Company for passing over portion of Railway.

Provided always, and be it enacted, That if and so long as the Fleetwood, Preston, and West Riding Junction Railway Company shall, for the greater convenience and security of the public using the said Lancaster and Preston Junction Railway, erect and maintain either a station or a lodge at the point where the said Fleetwood, Preston, and West Riding Junction Railway will cross the said last-mentioned railway on the level, and shall abide by all such rules and regulations with regard to the crossing of such road on the level, and with regard to the speed at which trains shall pass such Lancaster and Preston Junction Railway, as may from time to time be made by the Commissioners of Railways, and shall also employ by day and by night a proper person or proper persons to watch or superintend the crossing at such point or station, who shall observe and abide by any such rule or regulation as aforesaid, it shall not be lawful for the said Lancaster and Carlisle Railway Company to demand any greater toll than as for two miles in respect of the passage of any passengers, animals, minerals, goods, wares, or merchandize which may pass on the said Lancaster and Preston Junction Railway for a less distance than two miles in going to or coming from the said Fleetwood, Preston, and West Riding Junction Railway.

REFERENCES AS TO THE USE OF THE RAILWAY BY ANOTHER COMPANY.

Manchester, Sheffield, and Lincolnshire Railway Act, 1849, 12 and 13 Vict., c. 81, s. 82.

[Differences as to the terms and conditions for the use of part of the Railway by the Great Northern Railway Company to be referred to an Engineer to be appointed by the Commissioners.]

Power to the Great Northern Railway Company to use certain portions of the Railway from Sheffield to Gainsborough.

And with respect to the said main line from Sheffield to Gainsborough, be it enacted, That it shall be lawful for the Great Northern Railway Company to use the said main line from Sheffield to Gainsborough, and the stations, reservoirs, and other conveniences thereto belonging, with their engines and carriages, for the purpose of conveying passengers, animals, goods, and minerals between Sheffield and other places situate on the said last-mentioned main line, and all places situate on the said Great Northern Railway at distances exceeding three miles from Retford and Gainsborough respectively, upon such terms and conditions as in the event of difference between the two Companies shall be settled by the engineers of the respective Companies, and, in case of difference, by some engineer to be appointed by the Commissioners of Railways.

Same Act, s. 83.

[Similar provision with respect to the use of part of the line by the Midland Railway Company.]

Power to Midland Railway Company to use part of the said Line.

And with respect to the said main line from Sheffield to Gainsborough, be it enacted, That it shall be lawful for the Midland Railway Company to make use of that part of the said main

line from Sheffield to Gainsborough which lies between the point of junction thereof with the said Staveley branch near Workop and the terminus near Gainsborough, and of the stations and works on such part of the same main line, with their engines, carriages, and waggons, in such manner and upon such terms and conditions as shall be agreed upon between the engineers of the respective Companies, or, in case of difference, by some engineer to be appointed by the Commissioners of Railways.

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Same Act, ss. 139, 140, and 141.

[Disputes as to regulations to be observed by the South Yorkshire, Doncaster, and Goole Railway Company in using certain parts of the line of the Manchester, Sheffield, and Lincolnshire Railway, and as to the accommodation to be provided for that Company's traffic, referred to the Commissioners of Railways.]

And whereas with respect to the said Barnsley junction and branches, the South Yorkshire, Doncaster, and Goole Railway Company have powers to construct railways in the immediate neighbourhood of the said Barnsley junction and branches, and in some places forming junctions therewith: Be it enacted, That it shall be lawful for the same Company to use, with engines and carriages, the said "Barnsley Junction," "the C. D. Branch," "the Silkstone Branch," and "the Moor End Branch," on such conditions as, failing any agreement between the Companies, may be settled by the principal engineers thereof, or, in case of their difference, by some person to be appointed by them: Provided always, that in so using or traversing the said railways the South Yorkshire, Doncaster, and Goole Railway Company shall observe the bye laws and regulations of the Company hereby incorporated applicable to them.

Power to South Yorkshire, Doncaster, and Goole Railway Company to use certain parts of Railway.

And with respect to the said Barnsley junction and branches, be it enacted, That all reasonable accommodation and facility shall be afforded by the Company hereby incorporated, at their several stations on the said Barnsley junction, C. D. branch, Silkstone branch, and Moor End branch, for the booking of passengers who may be desirous of being conveyed, and of all goods conveyed or directed to be conveyed, by any of the trains of the South Yorkshire, Doncaster, and Goole Railway Company which under the powers hereinbefore contained may start from or arrive at any such stations; and the additional expense which the Company hereby incorporated may incur in providing such accommodation (whether in the employment of officers or otherwise) to the South Yorkshire, Doncaster, and Goole Railway Company shall be borne by the last-named Company, the amount of such expense to be from time to time settled and determined by agreement between the said Companies, or if the parties shall differ, then in the manner hereinbefore provided for the settlement of matters in difference or dispute between the said Companies.

Accommodation to be provided for booking passengers and goods.

And with respect to the said Barnsley junction and branches, be it enacted, That in case there shall be any dispute between the said Companies respecting any such regulations or bye laws, or respecting the mode in which the South Yorkshire, Doncaster, and Goole Railway Company shall exercise any of the powers or privileges hereinbefore given to them, or respecting the regulations to be adopted by the said Companies for the convenience and accommodation of each other, or for the protection of or relating to their own traffic respectively, or respecting any other matter or thing arising out of the provisions of this Act or in relation thereto, for the settlement of which express provision has not been hereinbefore already made, the same shall be decided and determined in the manner hereinbefore provided: Provided always, that neither such regulations and bye laws as aforesaid, nor the award thereon of the said engineers or their umpire, shall have any force or virtue unless and until the same shall have been approved of and confirmed by the Commissioners of Railways.

Differences to be settled by arbitration.

Same Act, s. 148.

[Differences respecting the terms or conditions for the use of the Staveley Branch by the Midland Railway Company, to be referred to an Engineer appointed by the Commissioners.]

And with respect to the said Staveley branch, be it enacted, That it shall be lawful for the Midland Railway Company to make use of the line of the same branch, and of the stations and works thereof, with engines, carriages, and waggons, in such manner and upon such terms and conditions as shall be agreed upon between the engineers of the Company hereby incorporated and of the said Midland Railway Company, and in case of difference between them by some engineer to be appointed by the Commissioners of Railways.

Power to the Midland Railway Company to use the Line.

REFERENCES AS TO THE CONSTRUCTION OF WORKS.

Dowlais Railway Act, 1849, 12 and 13 Vict., c. 61, s. 19.

[The manner of constructing, maintaining, and working the crossing of the Pen-y-darran Mineral Railway, to be referred to the decision of the Commissioners.]

And be it enacted, That, notwithstanding anything in this Act, or in the said Railway Clauses Consolidation Act, 1845, contained, it shall not be lawful for the said Dowlais Iron Company, without the consent in writing of the proprietors thereof for the time being, to take, use, divert, or in any manner interfere with or obstruct the mineral railway of the said proprietors of the said Pen-y-darran Iron Works further or otherwise than shall be found necessary for constructing and from time to time maintaining and working the railway by this Act authorized to be made upon and across the present level of the rails of the same mineral railway, so nevertheless that such construction, maintenance, and working of the railway by this Act authorized shall be done and carried on with as little inconvenience as possible to the said Pen-y-darran Iron Company; and in case the said last-mentioned Company shall be of opinion that such

Dowlais Iron Company not to interfere with Pen-y-darran Mineral Railway.

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construction, maintenance, and working of the railway by this Act authorized is not done or carried on with as little inconvenience as possible to the said Pen-y-Darran Iron Company, it shall be lawful for the Commissioners of Railways, on application to them by the said Pen-y-Darran Iron Company, to direct in what manner such construction, maintenance, and working shall be done and carried on, and the decision of the said Commissioners shall be binding upon both the said parties, and the said railway by this Act authorized shall thenceforth be constructed, maintained and worked in accordance with the decision of the said Commissioners, and the expense of such alteration in the rails and works of the said mineral railway, or in the rails and works of the railway by this Act authorized, as shall be necessary for the purposes aforesaid, shall be from time to time borne and paid by the said Dowlais Iron Company, and the same alterations shall be made and maintained to the satisfaction of a competent engineer to be nominated by the said proprietors of the said mineral railway.

Manchester, Sheffield, and Lincolnshire Railway Act, 1849, 12 and 13 Vict., c. 81, s. 133.

[Disputes between the Manchester, Sheffield, and Lincolnshire Railway Company and the Barnsley Canal Company, as to the manner of constructing communications by tramways under, through, or over the Barnsley Junction Railway, to be referred to the decision of the Commissioners.]

Disputes between Manchester, Sheffield, and Lincolnshire Railway Company and Barnsley Canal Company, as to communications to be referred to decision of Railway Commissioners.

And with respect to the said Barnsley junction and branches, be it enacted, That if any difference or dispute shall arise between the Company hereby incorporated and the said Barnsley Canal Company, or any such person or persons so entitled to make such communications as aforesaid, or between the respective engineers of such Companies or persons, as the case may be, with respect to the mode or manner of constructing any such communications by tramways under, through, or over the said Barnsley junction and branches, or any of them, or any embankment thereof, or as to the plans and sections according to which the same ought to be constructed, the matter in dispute shall be referred to the decision of the Commissioners of Railways, whose decision shall be binding and conclusive upon all parties concerned; and the said Commissioners shall have power to make such rules and regulations with reference to the construction of the works necessary for forming such communications, and the period within which the same shall be completed, and for preventing unnecessary interruption or inconvenience to the passage of the traffic upon the said Barnsley junction and branches, from damage or injury arising from the construction of the said works, as they shall from time to time think fit; and if any of the said parties, or any person acting under their authority, shall neglect or infringe any of such rules or regulations, he shall forfeit for every such offence a sum not exceeding 20*l*.

Same Act, s. 134.

[Disputes between the same Companies as to the diversion of tramways belonging to the Canal Company, or the traffic passing along the same, to be referred to the decision of the Commissioners.]

Disputes between these Companies as to diversions of tramways, &c., to be referred to decision of Railway Commissioners.

And with respect to the said Barnsley junction and branches, be it enacted, That in case any difference or dispute shall arise between the Company hereby incorporated and the said Barnsley Canal Company, in reference to the execution of the diversions of the tramways belonging to the said Canal Company, or to the traffic passing along the same, any such difference or dispute shall be referred to the Commissioners of Railways, whose decision shall be final and conclusive on all parties.

Same Act, s. 136.

[Manner of making the junctions with the Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield, and Goole Railway, to be referred, in case of difference, to the Commissioners of Railways.]

Junction with the Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield, and Goole Railway, to be constructed under the direction of the Engineer of the Company.

And with respect to the said Barnsley junction and branches, be it enacted, That the junctions of the same with the Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield, and Goole Railway, and all such openings in the ledges or flanches of the last-mentioned railway as may be necessary or convenient for effecting such junctions, shall be made by and at the expense of the Company hereby incorporated, under the direction and superintendence and to the satisfaction of the engineer for the time being of the said Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield, and Goole Railway Company: Provided nevertheless, that if such engineer of the said last-mentioned Company should prescribe a mode for effecting the said junctions which the engineer for the time being of the Company hereby incorporated cannot or shall not approve, then such junctions shall be effected in such manner as shall be approved of and directed by the Commissioners of Railways and not otherwise: Provided also, that if within one calendar month after request in writing made to the engineer or secretary of the Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield, and Goole Railway Company for that purpose, such engineer shall neglect or refuse to prescribe a proper mode of effecting such junctions, then it shall be lawful for the engineer of the said Company hereby incorporated to effect the same in such manner as shall be prescribed and approved by the said Commissioners of Railways.

Same Act, s. 138.

[Disputes between the Manchester, Sheffield, and Lincolnshire Railway Company and the Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield, and Goole Railway Company, respecting the lands to be taken by each Company near the point of junction, to be referred to the Commissioners.]

Disputes between the Manchester, Sheffield, and Lincolnshire, and the Sheffield, Rotherham, Barnsley, Wake-

And with respect to the said Barnsley junction and branches, be it enacted, That in case any difference or dispute shall arise between the Company hereby incorporated and the Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield, and Goole Railway Company in reference to any lands, grounds, or buildings which may be required by either of the said Com-

panies, and which they have mutually power to purchase (except such lands, grounds, or buildings as may have been purchased or contracted to be purchased by the said Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield, and Goole Railway Company prior to the first day of June, One thousand eight hundred and forty-seven,) or as to the mode in which such junction shall be effected, any such difference or dispute shall be referred to the Commissioners of Railways, whose award and determination shall be binding and conclusive on both the said Companies.

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field, Huddersfield, and Goole Railway Companies, to be referred to the Railway Commissioners.

Same Act, s. 151.

[Differences as to the mode of effecting the junction between the Saxelby Branch of the Manchester, Sheffield, and Lincolnshire Railway and the Nottingham and Lincoln Line of the Midland Railway, to be referred to the decision of the Commissioners.]

And with respect to the Saxelby branch, be it enacted, That it shall be lawful for the Company to connect the line of the said branch with the Nottingham and Lincoln line of the Midland Railway Company in the parish of St. Mark in the city of Lincoln: Provided always, that all such openings in the ledges and flanches of the said Nottingham and Lincoln Railway as may be necessary or convenient for effecting such junction shall be made and effected under the direction and superintendence of the engineer for the time being of the Midland Railway Company; and in case of any difference of opinion as to the mode of effecting such junction, then such difference shall be referred to the decision of the Commissioners of Railways.

Communication with the Nottingham and Lincoln Railway to be made under the direction of the Engineer of the Midland Railway Company.

Stirling and Dunfermline Railway (Deviation, Extension of Time, and Amendment) Act, 1849, 12 and 13 Vict., c. 86, s. 25.

[Differences as to the nature and necessity of the works at the junction of the Railway with the Scottish Junction Railway, to be referred to arbitration, or to the decision of the Commissioners, at the option of the Scottish Central Railway Company.]

And be it enacted, That, saving in so far as hereinbefore expressly provided, it shall not be lawful to the Stirling and Dunfermline Railway Company, or any other Company or party, to enter upon, purchase, or take any lands belonging to the Scottish Central Railway Company, without the previous consent of such Company first had and obtained, nor to alter or vary the line or levels of the said Scottish Central Railway without such consent as aforesaid, nor shall it be in the power of the said Stirling and Dunfermline Railway Company to interfere with the said railway except for the purpose of making and maintaining the junction before-mentioned, in the manner herein provided, or in any way to interrupt or interfere with the traffic passing on the said last-mentioned railway, anything in the said recited Acts to the contrary notwithstanding; and the said Stirling and Dunfermline Railway Company shall bear all the expenses of effecting such junction as aforesaid, and of maintaining, watching, and working the same, and of the necessary works for preventing danger, inconvenience, or interruption therefrom to the traffic on the said Scottish Central Railway, and shall also, at their own sole costs and charges, construct and for ever after maintain such and so many switches, turntables, sidings, and other works and conveniences as may be necessary or convenient in connexion with the said junction, and for preventing any such danger, interruption, or inconvenience to the traffic of the said Scottish Central Railway: Provided always, that if any difference shall arise between the said two Companies as to the nature or necessity of any such works as aforesaid, the same shall be determined by arbitration in manner aforesaid, or by the decision of the Commissioners of Railways, at the option of the said Scottish Central Railway Company.

Lands and Works of the Scottish Central Railway Company not to be interfered with without consent.

LEVEL CROSSINGS.

Reading, Guildford, and Reigate Railway (Connexion with London and South Western Railway) Act, 1849, 12 and 13 Vict., c. 8, s. 17.

[The Commissioners may require a bridge to be substituted for the level crossing.]

Provided always, and be it enacted, That it shall be lawful for the Commissioners of Railways, if it shall appear to them to be necessary for the public safety, at any time, either before or after the railway hereby authorized to be carried across the said roads on the level shall have been completed and opened for public traffic, to require the Company within such time as the said Commissioners shall direct, and at the expense of the Company, to carry any or either of the hereinbefore mentioned roads either under or over the railway by means of a bridge or arch in lieu of crossing the same on the level, or to execute such other works as under the circumstances of the case shall appear to the said Commissioners best adapted for removing or diminishing the danger arising from any such level crossing.

Commissioners of Railways may require a bridge to be erected in lieu of level crossing.

Newcastle-upon-Tyne and Carlisle (Alston Branch) Railway Act, 1849, 12 and 13 Vict., c. 43, s. 14.

[Same clause.]

Stockton and Darlington Railway (Consolidation of Acts, Increase of Capital, and Purchase of the Middlesborough Dock) Act, 1849, 12 and 13 Vict., c. 54, s. 22.

[Same clause.]

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York, Newcastle, and Berwick Railway Act, 1849, 12 and 13 Vict., c. 58, s. 20.

[Same clause.]

York and North Midland Railway Act, 1849, 12 and 13 Vict., c. 60, s. 7.

[Same clause.]

East Lancashire Railway Act, 1849, 12 and 13 Vict., c. 71, s. 8.

[Same clause.]

Manchester, Sheffield, and Lincolnshire Railway Act, 1849, 12 and 13 Vict., c. 81, s. 250.

[Same clause.]

Great Northern Railway Acts' Amendment Acts, 1849, 12 and 13 Vict., c. 84, s. 13.

[Same clause.]

Stirling and Dunfermline Railway (Deviation, Extension of Time, and Amendment) Act, 1849, 12 and 13 Vict., c. 86, s. 12.

[Same clause.]

[Reading, Guildford, and Reigate Railway (Connexion with London and South Western Railway) Act, 1849, 12 and 13 Vict., c. 28, s. 16.

[Regulations with regard to the crossing roads on the level, and with regard to the speed of trains at level crossings may be made by the Commissioners.]

Company to erect a Station or Lodge at the points of crossing, and to abide by the regulations of the Commissioners of Railways.

And be it enacted, That for the greater convenience and security of the public the Company shall erect and permanently maintain either a station or lodge at the points where the said Railway crosses the before-mentioned roads on the level, and the said Company shall be subject to and shall abide by all such rules and regulations with regard to the crossing of such roads on the level, or with regard to the speed at which trains shall pass such roads, as may from time to time be made by the Commissioners of Railways; and if the said Company shall fail to erect or at all times maintain any such station or lodge, or appoint a proper person to watch or superintend the crossing at any such point or station, or to observe or abide by any such rule or regulation as aforesaid, they shall for every such offence be liable to a penalty of twenty pounds, and also to a daily penalty of ten pounds for every day such offence shall continue after such penalty of twenty pounds shall have been incurred.

Newcastle-upon-Tyne and Carlisle (Alston Branch) Railway Act, 1849, 12 and 13 Vict., c. 43, s. 13.

[Same clause.]

Stockton and Darlington Railway (Consolidation of Acts, Increase of Capital, and Purchase of the Middlesborough Dock) Act, 1849, 12 and 13 Vict., c. 54, s. 21.

[Same clause.]

York, Newcastle, and Berwick Railway Act, 1849, 12 and 13 Vict., c. 58, s. 19.

[Same clause.]

York and North Midland Railway Act, 1849, 12 and 13 Vict., c. 60, s. 6.

[Same clause.]

East Lancashire Railway Act, 1849, 12 and 13 Vict., c. 71, s. 7.

[Same clause.]

Manchester, Sheffield, and Lincolnshire Railway Act, 1849, 12 and 13 Vict., c. 81, s. 68.

[Same clause.]

Great Northern Railway Acts Amendment Act, 1849, 12 and 13 Vict., c. 84, s. 12.

[Same clause.]

Stirling and Dunfermline Railway (Deviation, Extension of Time, and Amendment) Act, 1849, 12 and 13 Vict., c. 86, s. 11.

[Same clause.]

USE OF LOCOMOTIVE ENGINES.

Appendix No. 80.

London and Blackwall Railway (Amendment and Extension of Time) Act, 1849, 12 and 13 Vict. c. 73, s. 8.

[The Commissioners are empowered to certify that locomotive engines can be used with safety on the Railway, and to regulate their use thereon.]

And be it enacted; That it shall not be lawful for the Company to use locomotive engines on the said London and Blackwall Railway unless it shall have been certified by the Commissioners of Railways that locomotive engines can, in their opinion, be used with safety on the said railway; and in case locomotive engines shall at any time hereafter be used on the said railway, it shall be lawful for the said Commissioners from time to time to require the Company to adopt such means of security, either in the locomotive engines to be used on the said railway, or in the construction of the works of the said railway, as shall be necessary to prevent the danger of fire from locomotive engines being used on the said railway; and the Company shall be subject to and shall abide by all such reasonable rules and regulations with regard to the use of locomotive engines on the said railway as may from time to time be made by the said Commissioners, for the purpose of preventing such danger of fire; and if the Company shall use any locomotive engine on the said railway without such certificate of the said Commissioners having been first obtained, or shall fail to adopt any of the means of security which may be required to be adopted as aforesaid, or shall fail to observe or abide by any such rules or regulations as aforesaid, the Company shall for every such offence be liable to a penalty not exceeding fifty pounds, and also to a daily penalty not exceeding ten pounds for every day such offence shall be continued after such penalty of fifty pounds shall have been incurred: Provided always, that nothing in this Act contained shall be construed to relieve the Company from any responsibility for damage by fire or otherwise to which they would be subject by common law.

Locomotive engines not to be used unless Commissioners of Railways certify that they can be with safety.

Penalty on using locomotive engines without certificate having been obtained.

PRIVATE BRANCH RAILWAYS.

Lancashire and Yorkshire Railway Act, 1849, 12 and 13 Vict., c. 50, s. 10.

[Power to lay down, with the consent of the Commissioners, private branch Railways, to communicate with the Railway on an inclined plane.]

And be it enacted, That it shall be lawful for the said devisees in trust and Earl of Ellesmere respectively, and their respective heirs and assigns, or other the owners, lessees, or occupiers for the time being of the said lands and mines respectively, to make, construct, and lay down, with the consent of the Railway Commissioners, and for ever thereafter to maintain, collateral branch railways, to communicate with the said extension and branch railways hereby authorized, to be made or either of them, in manner and subject to the restrictions and conditions provided by the Railway Clauses Consolidation Act, 1845, with respect to collateral branch railways, to communicate with the railway, except and notwithstanding that such collateral branch railways may communicate with the said lines of railway on an inclined plane, and such communication shall be made so as not to interfere with the safety of the public, or to injure the main line of railway.

Communications may be made on inclined planes.

SALE OF SUPERFLUOUS LANDS.

York, Newcastle, and Berwick Railway Act, 1849, 12 and 13 Vict., c. 58, s. 35.

[The Commissioners are empowered to extend the period for the sale of superfluous land.]

And whereas by the said first-recited Act the said Company were required to sell such superfluous lands as they might not want within 10 years from the passing of that Act, and a similar provision is contained in several of the Acts hereinbefore mentioned or referred to, and to which the said Company are now made subject: And whereas the said Company have, under the provisions of some of the said recited Acts, become amalgamated with or lessees under other Railway Companies, and have also become the owners of other lines of railway in the Acts relating to which or some of them a similar provision was contained: And whereas by reason of the great extension of the railways belonging to the said Company, and of the increased traffic thereon, various portions of land which might at one time have been considered superfluous are now used for additional station accommodation, cottages and gardens for labourers on the said railway, and for other purposes connected therewith; and it is apprehended that the remainder of such lands may in due time be required for the like or for other purposes connected with the said railway, owing to the still increasing traffic on the same, and the want of further accommodation for the public: Be it therefore enacted, That the period allowed by the said recited Acts, or the Acts therein recited or referred to, or any of them, for the sale of any superfluous lands, shall be and the same is hereby extended to the further period of five years from the passing of this Act, and from thenceforward, after the expiration of such five years, until the person or persons claiming any such lands or entitled thereto shall give notice in writing to the said Company of such his or their claim or title, and twelve calendar months shall have elapsed from the service of such notice on the said Company: Provided always, that in case before the expiration of the said period of twelve

Extending time for the sale of superfluous lands.

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months the said Company shall have reasonable grounds to apprehend that the lands to which any such notice shall relate, or any part thereof, may be thereafter required by them for the purposes of their said railways, and shall obtain the certificate of the Commissioners of Railways extending the said period for such further term as they may think fit, and so from time to time as often as such Commissioners shall deem reasonable (which certificate the said Commissioners are hereby authorized to grant), or if the said Company shall, before the expiration of the said twelve months, use or apply any such lands for any purpose connected with their said railway, then, and in every such case such claim or title shall, as regards the lands so likely to be required or which may be used, as the case may be, be postponed until the expiration of such extended period or periods, or altogether cease, as the case may be.

York and North Midland Railway Act, 1849, 12 and 13 Vict., c. 60, s. 26.

[Same provision.]

Extending the time for the sale of superfluous lands.

And whereas by the said first-recited Act the said Company were required to sell such superfluous lands as they might not want within 10 years from the passing of that Act, and a similar provision is contained in several of the Acts hereinbefore mentioned or referred to, and to which the said Company are now made subject: And whereas the said Company have under the provisions of some of the said recited Acts become the lessees and owners of other lines of railway, in the Acts relating to which, or some of them, similar provisions are contained: And whereas, by reason of the great extension of the railways belonging to the said Company, and of the increased traffic thereon, various portions of land which were at one time considered superfluous, are now used for additional station accommodation, cottages and gardens for labourers on the said railways, and for other purposes connected therewith, and it is apprehended that the remainder of such lands may in due time be required for the like or for other purposes connected with the said railways, owing to the still increasing traffic on the same, and the want of further accommodation for the public: Be it therefore enacted, That the period allowed by the said recited Acts or the Acts therein recited or referred to, or any of them, for the sale of any superfluous lands, shall be and the same is hereby extended to the further period of five years from the passing of this Act, and from thenceforward, after the expiration of such five years, until the person or persons claiming any such lands or entitled thereto shall give notice in writing to the said Company of such his or their claim or title, and twelve calendar months shall have elapsed from the service of such notice on the said Company: Provided always, that in case, before the expiration of the said period of twelve months, the said Company shall have reasonable grounds to apprehend that the lands to which any such notice shall relate, or any part thereof, may be thereafter required by them for the purposes of their said railways, and shall obtain the certificate of the Commissioners of Railways, extending the said period for such further term as they may think fit, and so from time to time as often as such Commissioners shall deem reasonable, (which certificate the said Commissioners are hereby authorized to grant,) or if the said Company shall before the expiration of the said twelve months use or apply any such lands for any purpose connected with their said railways, then and in every such case such claim or title shall, as regards the lands so likely to be required or which may be used, as the case may be, be postponed until the expiration of such extended period or periods, or altogether cease, as the case may be.

AMALGAMATIONS.

Lancashire and Yorkshire and London and North Western Railways (Preston and Wyre Railway Harbour and Dock vesting) Act, 1849, 12 and 13 Vict., c. 74, s. 43.

[The Commissioners may require inconveniences, arising from the transfer of the Preston and Wyre Railway, Harbour, and Dock, to be remedied by the Lancashire and Yorkshire and London and North Western Railway Companies.]

Commissioners of Railways may require inconveniences and evils to be remedied.

And be it enacted, That if at any time after the passing of this Act it shall appear to the Commissioners of Railways to be necessary for the interests of the public, it shall be lawful for the said Commissioners to require the said Lancashire and Yorkshire and London and North Western Railway Companies, or either of them, to proceed forthwith to the correction or prevention of any inconveniences or evils by the Commissioners specified, and which may appear to the said Commissioners to have arisen or to be likely to arise, directly or indirectly, from the said Preston and Wyre Railway, Harbour, and Dock having been transferred to the said Lancashire and Yorkshire and London and North Western Railway Companies, so as injuriously to affect the use thereof by the public; and upon the failure or inability of the said Companies, or either of them, to whom the same shall be made or apply, to comply with the requisition of the said Commissioners in the particulars aforesaid, within the period of six months from the date of such requisition, it shall be lawful for the said Commissioners to serve the said Lancashire and Yorkshire and London and North Western Railway Companies respectively with notice to introduce into Parliament in the then existing session, if Parliament should be then sitting, and, if not, in the next ensuing session, a Bill or Bills for amending this Act in such particulars as aforesaid, and thereupon the said Lancashire and Yorkshire and London and North Western Railway Companies shall and they are hereby required to introduce such Bill or Bills accordingly, and duly to prosecute the same, in default whereof it shall be lawful for the said Commissioners to introduce or prosecute (as the case may be) such Bill or Bills, at the expense of the said Lancashire and Yorkshire and London and North Western Railway Companies.

Manchester, Sheffield, and Lincolnshire Railway Act, 1849, 12 and 13 Vict., c. 81, s. 275.

Appendix No. 80.

[The Commissioners may require the Company to remedy any inconveniences specified by the Commissioners.]

And be it enacted, That if at any time after the passing of this Act it shall appear to the Commissioners of Railways to be necessary for the interests of the public, it shall be lawful for the said Commissioners to require the Company hereby incorporated to proceed forthwith to the correction or prevention of any inconveniences or evils by the Commissioners specified; and upon the failure or inability of such Company to comply with the requisitions of the said Commissioners, within the period of six months from the date of such requisition, in the particulars aforesaid, it shall be lawful for the said Commissioners to serve the said Company with notice to introduce into Parliament in the then existing session, if Parliament should be then sitting, and if not in the then next ensuing session, a Bill or Bills for amending this Act in such particulars as aforesaid, and thereupon the said Company shall and is hereby required to introduce such Bill or Bills accordingly, and duly to prosecute the same, in default whereof it shall be lawful for the said Commissioners to introduce or prosecute (as the case may be) such Bill or Bills, at the expense of the said Company.

Commissioners of Railways may require inconveniences and evils to be remedied.

APPOINTMENT OF AUDITOR.

Eastern Union Railway Amendment Act, 1849, 12 and 13 Vict., c. 92, s. 16.

[The Commissioners, within 12 months after the passing of the Act, are to appoint an Auditor, who shall annually report to them on the finances of the Company; no such Auditor to be appointed after the 31st of July, 1854.]

And be it enacted, That the Company shall, within nine months after the passing of this Act, make application in writing under their common seal to the Commissioners of Railways to appoint an auditor to examine and report to them on the financial affairs of the Company, and the said Commissioners are hereby required, within twelve months after the passing of this Act, to appoint such auditor, and from time to time to remove and replace such auditor; and all the powers granted by the "Companies Clauses Consolidation Act, 1845," to the auditors to be appointed by Companies touching the demanding and examining of books and accounts are hereby also conferred on the auditor so from time to time to be appointed by the Commissioners; and such auditors shall annually report to the Commissioners concerning the finances of the Company, and the amount and application of their income, and the said Commissioners may, if they think fit, order such report to be printed at the expense of the Company, and the expenses and remuneration of such auditors shall be settled by the Commissioners and be defrayed by the Company: Provided always, that no such auditor shall be appointed after the Thirty-first day of July One thousand eight hundred and fifty-four, and on that day all the powers of any auditor who may have been appointed under the power for that purpose hereinbefore contained, and who shall then be in office, shall cease and absolutely determine.

Commissioners of Railways, on application of Company, to appoint an Auditor, who shall report to them on the financial affairs of the Company

Commissioners may order Report to be printed at the expense of the Company.

SUPERVISION OF CANALS.

Edinburgh and Glasgow Railway and Edinburgh and Glasgow Union Canal Amalgamation Act, 1849, 12 and 13 Vict., c. 39, s. 26.

[The Commissioners may require the Company to remedy inconveniences arising from the transfer of the Canal.] :

And be it enacted, That if at any time, after the vesting of the canal in the Railway Company, it shall appear to the said Commissioners that any evil or inconvenience has arisen or is likely to arise to the public, directly or indirectly, from the transference of the canal to the Railway Company, whereby the use of the canal by the public has been or may be injuriously affected, it shall be lawful for the said Commissioners to require the Railway Company forthwith to adopt all measures necessary for the effectual prevention or correction of such evil or inconvenience; and upon the failure or inability of the Railway Company to comply with such requisition within a period of six months from the date thereof, it shall be lawful for the said Commissioners to serve the Railway Company with notice to introduce into Parliament in the then existing session of Parliament, if Parliament be then sitting, and if not, in the next ensuing session, a Bill for amending this Act in such particulars as shall be specified by the said Commissioners, and thereupon the Railway Company shall and they are hereby required to introduce such Bill accordingly, and duly to prosecute the same, in default whereof it shall be lawful for the said Commissioners to introduce or prosecute, as the case may be, such Bill at the expense of the Railway Company.

Commissioners of Railways may remedy inconveniences.

Manchester, Sheffield, and Lincolnshire Railway Act, 1849, 12 and 13 Vict., c. 81, s. 263.

[The Commissioners may, upon complaint made to them, require the Company to put the Chesterfield and Gainsborough Canal into proper repair.]

And with respect to the said Chesterfield and Gainsborough Canal, be it enacted, That the Company hereby incorporated shall not at any time hereafter sell or dispose of, to any person or persons whomsoever, any part of the said canal, or the works thereto belonging; and that the said Company hereby incorporated shall and they are hereby expressly directed and required, from time to time and at all times hereafter, to keep and maintain the said canal, and the works thereto belonging, and every part thereof respectively, in good working order and condition, and preserve the supplies of water to the same, so that the same canal and every

The Railway Company to keep the Canal open and in good repair, and not to sell same.

Appendix No. 80.

part thereof may be at all times kept open and navigable for the use of all persons desirous to use and navigate the same, and that without any unnecessary hindrance, interruption, or delay; and that in case the said Company shall not at all times hereafter repair, maintain, and support the same canal, and the several reservoirs, tunnels, towing paths, lands, buildings, and works belonging thereto, in such good working order and condition, and preserve the supplies of water as aforesaid, then and in every such case it shall any may be lawful for the Lords Commissioners of her Majesty's Treasury, or for the Commissioners of Railways, if they think fit, upon the complaint and at the cost of any person or persons using or desirous of using the said canal, and after giving fourteen days' notice in writing to the said Company, to cause an inquiry to be made as to the state and condition of the said canal, and the several reservoirs, tunnels, towing paths, lands, buildings, and works belonging thereto; and if upon such inquiry and examination the same shall not be found to be in such good working order and condition as aforesaid, it shall be lawful for the said Lords Commissioners, or for the Commissioners of Railways, to cause a notice to be given to the said Company to put the same and every part thereof in such good working order and condition as aforesaid; and in default of their putting the same into such repair as aforesaid within twenty-one days from the delivery or leaving of such notice as aforesaid, it shall be lawful for the said Lords Commissioners, or Commissioners of Railways, to cause the same to be put into such order and condition as aforesaid; and that the costs, charges, and expenses of making such inquiry and repairs as aforesaid shall be borne and paid by such party and in such manner as the said Lords Commissioners, or Commissioners of Railways, shall order and direct; and if not so paid, the party entitled to receive the same shall and may recover the same by action at law in any of her Majesty's Courts of law at Westminster against the party or parties ordered to pay the same.

Same Act, s. 267.

[The Commissioners, on complaint made to them, are to regulate the bye-laws and tolls upon the Canal.]

For regulating bye-laws and tolls upon the Canal.

And with respect to the said Chesterfield and Gainsborough Canal, be it enacted, That if at any time complaint shall be made to the Lords Commissioners of her Majesty's Treasury, or to the Commissioners of Railways, by any person whomsoever, that the bye-laws now or at any time hereafter made or to be made by the Company in respect of the said canal are impolitic or unjust, or operate to the prejudice or disadvantage of persons using or desirous of using or trading upon the said canal, or that the amount of the tolls, rates, or duties receivable or claimable by the said Company by virtue of this Act operate prejudicially to the persons using or intending to use the said canal, it shall be lawful for the said Lords Commissioners or other officers, and they are hereby required, from time to time when and as such complaints shall be made, and after giving fourteen days' notice in writing to the Company of their intention to examine and inquire, or, at their discretion, to appoint some competent person to examine and inquire, into such complaints, and the grounds thereof, and after such examination had to make such regulations from time to time as the said Lords Commissioners shall think fit with respect to the said bye-laws, and to the amount of all or any of the tolls, rates, and duties which shall be received or claimable by the said Company by virtue of this Act, and by such regulations to impose such conditions and restrictions with regard to the said bye-laws, and the amount of all or any part of such tolls, rates, and duties, as the said Lords Commissioners shall think fit; and every such regulation, on being published in the London Gazette, shall be binding upon the said Company; and such tolls, rates, and duties only as may be fixed thereby shall be recoverable by them, until such regulation be revoked or altered by the said Lords Commissioners.

APPENDIX No. 81.

STATEMENT of the Number and Nature of the ACCIDENTS and the INJURIES to LIFE and LIMB which have occurred on the RAILWAYS in *Great Britain and Ireland*, for the Half-years ending 30th June, and 31st December 1849; together with the Number of Passengers conveyed during those Periods.

(HALF-YEAR ENDING 30th JUNE 1849.)

Date of Accident.	NAME OF RAILWAY.	Number of Persons		Number of Passengers carried during the Half-year ending 30th June, 1849.	Nature and Cause of Accident, taken from the Reports made to the Commissioners of Railways by the Railway Companies.
		Killed.	Injured.		
1849.	Aberdeen . . . . .	..	..	123,343	
	Ardrossan . . . . .	..	..	40,166	
	Belfast and Ballymena . .	..	..	189,236	
	Belfast and County Down .	..	..	81,441	
	Birkenhead, Lancashire, and Cheshire Junction.	..	..	203,778	
	Bodmin and Wadebridge .	..	..	1,670	
	Bolton, Blackburn, Clitheroe, and West Yorkshire.	..	..	92,339	
	Bristol and Exeter . .	..	..	105,328	From 1st May only. The previous traffic is included in Great Western.
1 Jan.	Caledonian	1	..	353,444	Trespasser run over at night.
10 Jan.	Ditto	1	..	..	John Lambie, servant of Company, incautiously passing between an engine-tender and some waggons which were being shunted, was crushed between the buffers.
20 Jan.	Ditto	1	..	..	John Johstone, boy, run over while trespassing on the line.
1 Feb.	Ditto	1	..	..	Robert Jackson, breakaman, of goods train, run over while incautiously standing behind his train, which was being backed into a siding.
1 Feb.	Ditto	1	..	..	William Gardner, fireman, while standing on the front part of his engine sanding the rails on an incline, was struck by some trucks which had broken loose from a mineral train in advance, and were running down the incline.
10 Feb.	Ditto	5	1	..	Five passengers killed and one severely injured in consequence of a second-class carriage and the following portion of a mail train getting off the rails and running over an embankment.
5 Mar.	Ditto	1	..	..	James Bell, passenger, incautiously standing on a waggon at a station, was thrown off, and run over, in consequence of other waggons, which were to be attached, buffing against the one on which he was standing.
23 April	Ditto	1	..	..	Callin Gallacher, in service of contractor, struck by a train before which he had incautiously stepped.
6 June	Ditto	1	..	..	John Walters, blacksmith, in employ of contractor, run over by an engine while he was incautiously walking on the line.
	Chester and Holyhead . .	..	..	119,911	
	Cockermouth and Workington.	..	..	27,037	
	Dublin and Drogheda . .	..	..	191,621	
1 Feb.	Dublin and Kingstown .	Nil	Nil	2,112,433	Train ran against a wall at the Westland Row station, in consequence of the breaks not acting effectively, the rails being slippery at the time; engine and two coaches damaged; no personal injury.
26 Feb.	Ditto	1	..	..	Edward M'Cleary, a boy, son of the station-master at Salt Hill, playing in front of the station-house, ran after his toy, which had rolled on the railway, and was run over by a passing train.
26 April	Ditto . . . . .	..	1	..	John Taase, passenger, jumping from a train in motion, dislocated his knee.
9 Jan.	Dundee, Perth, and Aberdeen Railway Junction.	..	1	263,736	Duncan Milne, porter, had his leg injured by a waggon passing over it.
	East Anglian . . . . .	..	..	112,566	
9 Jan.	Eastern Counties (including traffic on the Norfolk and Newmarket lines).	..	1	1,472,883	Thomas Cox, gatekeeper, incautiously walking along the line, was struck by a goods train; shoulder broken and head bruised.
14 Jan.	Ditto	1	..	..	John Lynch, contractor's servant, run over by a mail train while incautiously walking on the line.
18 Mar.	Ditto . . . . .	..	8	..	A Woolwich train overtook and ran into another train at the Mile End station, causing slight injuries to eight passengers.

Date of Accident.	NAME OF RAILWAY.	Number of Persons		Number of Passengers carried during the Half-year ending 30th June, 1900.	Nature and Cause of Accident, taken from the Reports made to the Commissioners of Railways by the Railway Companies.
		Killed.	Injured.		
1849.					
17 April	Eastern Counties (including traffic on the Norfolk and Newmarket lines)— <i>continued.</i>	1	..	..	Mary Fletcher, passenger, attempting to jump from a train before it had stopped, fell, and was crushed between the platform and the carriages.
21 April	Ditto	1	..	..	Thomas Cumming, carriage-cleaner, endeavouring to get upon a train in motion, fell and was run over.
30 May	Ditto	1	..	..	William Gant, guard, fell from a train, and was run over by a passing engine.
8 June	Ditto	1	..	..	Edward Marjoram, porter, crushed between buffers while shunting waggons.
12 June	Ditto	1	..	..	William Davidson, a soldier of the 75th regiment, passenger, having fallen asleep, awoke suddenly, and, opening the door of the carriage, fell out.
16 June	Ditto	1	..	..	Thomas Overall, trespasser, run over.
16 June	Ditto	1	..	..	John Twiner, trespasser, run over.
22 Jan.	Eastern Union . . . . .	..	..	137,312	
	East Lancashire . . . . .	..	2	728,723	Matthias Clayton, breakman of a ballast train, and William Metcalfe, labourer in the service of the Company, severely injured in consequence of the train coming in contact with a gate; accident occurred partly through neglect of engine-driver.
20 Feb.	Ditto	1	..	..	Richard Birtwistle, trespasser, run over.
20 Feb.	Ditto	NH	Nil	..	Passenger train ran into a goods train at the Haslingden station; accident occurred in consequence of the goods train being shunted at an improper time.
23 April	Ditto	1	..	..	John Hayes, servant of the Company, crushed between a carriage step and the platform, at the Accrington station, while he was uncoupling carriages.
2 May	Ditto	1	..	..	Thomas Healy, breakman, crushed between buffers while shunting waggons.
28 May	Ditto . . . . .	..	1	..	A special excursion train, having come to a stand for want of water, was run into by an ordinary passenger train, which damaged an engine in the rear of the special train, and another excursion train coming up shortly afterwards, came into collision with them, but without doing any damage. Some of the passengers in the first excursion train jumping out, were slightly hurt, one having his shoulder dislocated.
	East Lincolnshire . . . . .	..	..	102,983	
	East and West Yorkshire Junction.	..	..	25,118	
	Edinburgh and Glasgow . . . . .	..	..	439,537	
6 April	Edinburgh and Northern . . . . .	..	1	595,376	W. Cook, fireman, fell while passing from the engine along the train; foot had to be amputated.
25 June	Ditto . . . . .	..	1	..	William Lowery, a boy in service of carriers on the railway, while carrying a box into a goods shed, was jammed between waggons which were about being attached to a goods train.
	Fleetwood, Preston, and West Riding Junction (Preston and Longridge line).	..	..	15,930	
	Furness . . . . .	..	..	7,778	
	Glasgow, Barrhead, and Neilston Direct (including Glasgow Southern Terminal).	..	..	105,335	
2 Feb.	Glasgow, Dumfries, and Carlisle..	1	..	37,336	William Johnstone, trespasser, run over at night.
	Glasgow, Paisley, and Greenock.	..	..	364,350	
	Glasgow, Paisley, Kilmar-nock and Ayr.	..	..	407,076	
20 Mar.	Great Northern	1	..	118,842	William Reid, guard, while looking out of the window of the coupé of a carriage in which he was riding, contrary to regulations, came in contact with a water-tank, and was instantly killed.
9 Jan.	Great Southern and Western (Ireland).	1	..	221,307	Daniel Liston, trespasser, run over while walking along the line.
12 May	Ditto . . . . .	..	1	..	Patrick Hickey, servant of the Company, attempting to get upon a waggon in motion, fell and was run over; both legs had to be amputated.

Date of Accident.	NAME OF RAILWAY.	Number of Persons		Number of Passengers carried during the Half-year ending 30th June, 1849.	Nature and Cause of Accident, taken from the Reports made to the Commissioners of Railways by the Railway Companies.
		Killed.	Injured.		
1849. 4 Feb.	Great Western (including Wilts, Somerset, and Weymouth, and Bristol and Exeter).*	1	..	1,211,572	Henry Deasant, watchman, in service of contractor. It is supposed he was run over while asleep on the line.
20 April	Ditto	1	..	..	Stephen Anstell, contractor's servant, run over by a train on the Wilts, Somerset, and Weymouth Railway, while he was imprudently walking on the line.
28 May	Ditto	1	..	..	Thomas Dolman, in employ of contractor, run over in a tunnel, while incautiously continuing to work as a train was approaching.
	Irish South Eastern . .	..	..	18,035	
	Kendal and Windermere .	..	..	57,261	
	Lancaster and Carlisle .	..	..	122,988	
	Lancaster and Preston Junction.	..	..	59,249	
5 Jan.	Lancashire and Yorkshire .	1	..	2,478,289	James Ferguson, guard, while incautiously moving from his carriage while the train was in motion, fell off and was run over.
6 Jan.	Ditto	1	..	..	Robert Pennington, porter, while uncoupling waggons, fell and was run over.
6 Jan.	Ditto . . . . .	..	1	..	John Naylor, boy, trespassing, was struck by an engine; head bruised.
10 Jan.	Ditto . . . . .	..	1	..	Gillies, luggage guard, had his shoulder crushed while shunting waggons.
10 Jan.	Ditto . . . . .	..	1	..	Samuel Naylor, porter, had his foot crushed while turning a waggon on a turn-table.
18 Jan.	Ditto	1	..	..	John Dawson, labourer, in Company's service, putting out his foot in order to stop a lorry on which he was riding, had it caught by the rail, and was thrown off.
23 Jan.	Ditto . . . . .	..	2	..	Mr. Norwood and John Stanley, attempting to cross the line in a gig before daybreak at a level crossing, were struck by a goods engine, and severely injured; the gate-keeper having left the gates to attend to the signal post, which was distant about 20 yards from the gates.
25 Jan.	Ditto	2	3	.. ..	Labourers in service of contractor. Waggon in which they were riding ran into a siding, owing to the points being left wrong, and upsetting, crushed them underneath.
26 Jan.	Ditto	1	..	..	John Stephenson, signal-man, knocked down by an up-train while he was imprudently standing on the line signalling a down-train.
6 Feb.	Ditto . . . . .	..	1	..	James Musgreave, guard, fell from a train in motion, and severely bruised. Foot slipped while fastening a sheet on the top of a carriage.
7 Feb.	Ditto . . . . .	..	1	..	David Moore, passenger, attempting to alight before the train had stopped, fell, and had his hip dislocated.
13 Feb.	Ditto	1	..	..	James Brooks, guard, assisting to replace a waggon which had got off the rails, was crushed between its buffers and the engine.
24 Feb.	Ditto . . . . .	..	1	..	Samuel Mellor, porter, had his arm crushed between buffers while uncoupling waggons.
1 Mar.	Ditto . . . . .	..	1	.. ..	Gregory Kitchen, servant of Company, injured between waggons which he was uncoupling.
17 Mar.	Ditto	1	1	..	W. Howard, ballast-man, killed, and J. Shaw, engine-driver, injured by a collision between two engines at the Blue Pits junction. Weather foggy at the time.
19 Mar.	Ditto	1	..	.. ..	John Crossley, engine-driver, having got off his engine to open points, was re-mounting, when he was struck by the connecting rod of the engine, and injured so seriously that he died soon after.
20 Mar.	Ditto . . . . .	..	1	..	W. Whittaker, porter, fell from footboard of a carriage in motion, and slightly injured.
15 April	Ditto . . . . .	..	1	..	James Blevin, luggage-guard, injured between buffers while coupling waggons.
21 April	Ditto . . . . .	..	1	..	John Gild, breaksman, fell from waggon, and had his head injured.
21 April	Ditto . . . . .	..	1	..	James Singleton, breaksman, attempting to get on a waggon in motion, slipped, and had his foot crushed by the wheels.

* Bristol and Exeter traffic for four months included in Great Western return.

Date of Accident.	NAME OF RAILWAY.	Number of Persons		Number of Passengers carried during the Half-year ending 30th June, 1849.	Nature and Cause of Accident, taken from the Reports made to the Commissioners of Railways by the Railway Companies.
		Killed.	Injured.		
1849.					
30 April	Lancashire and Yorkshire —continued.	..	1	. .	Philip M'Maim, in service of contractor, had his foot injured by a goods train running into a ballast train which had stopped to discharge.
5 May	Ditto . . . . .	..	1	. .	James Hertford, servant of Company, crushed between buffers while moving waggons.
5 May	Ditto	1	..	. .	George Scholes, contractor's servant, crushed between buffers while incautiously passing between carriages.
5 May	Ditto . . . . .	..	1	. .	Jonathan Michlethwaite, contractor, fell from a waggon, and broke his leg.
8 May	Ditto . . . . .	..	1	. .	Michael Riley, excavator, attempting to get on a ballast waggon, had his shoulder crushed between buffers.
17 May	Ditto . . . . .	..	1	. .	Joshua Naylor, watchman, injured between buffers while coupling waggons.
22 May	Ditto	2	1	. .	Levi Scholes, fireman, and William Baldwin, engine-driver of a coal train, killed, and John Ryan, a trespasser, riding on the engine, injured, by a coke train running into the coal train. Collision occurred in consequence of Ellis Elvert, a stranger, who was standing at the signal-post, taking off the proper signal, in compliance with what he conceived to be a sign from one of the servants of the Company.
3 June	Ditto . . . . .	..	1	. .	John M'Gee, porter; head seriously injured by coming in contact with a bridge while he was walking on the top of a train in motion.
4 June	Ditto . . . . .	..	1	. .	John Cramny, assistant breaksman, incautiously placing his hand between buffers, had it severely crushed.
18 June	Ditto	1	..	. .	William Shackleton, servant of Company, fell while uncoupling waggons, and was run over.
19 June	Ditto	1	..	. .	Daniel M'Coy, servant of contractor, run over while incautiously walking on the line.
25 June	Ditto	1	..	. .	Ralph Boardman, Company's servant, attempting to get upon a waggon in motion, fell, and was run over.
26 June	Ditto . . . . .	..	1	. . .	John Moss, carriage-washer, struck by a carriage while incautiously standing too close to the rails, and had his hip fractured by the blow.
27 Feb.	Leeds and Thirsk . . .	1	..	33,668	John Gilbertson, goods guard, fell from the tender while shunting waggons, and was run over.
	Liverpool, Crosby, and Southport.	..	..	42,124	
26 Feb.	Llanelly Dock and Railway	..	1	2,504	John Morris, servant of Company, while applying break to a waggon, a wheel gave way, and broke his leg.
31 May	Ditto	1	..	. .	John Davis, boy five years old, trespassing, crushed between two waggons, between which he had got unperceived.
4 Jan.	London and Blackwall .	1	..	995,137	Giovanni Peneris, passenger (a Greek sailor), while leaning against the door of a carriage, forced it open, and falling out, was run over by a portion of the train.
29 Mar.	Ditto . . . . .	..	1	. .	Henry Parry, labourer on the line, fell from a ballast-waggon, on the edge of which he had been riding, and was run over; leg had to be amputated.
16 Jan.	London, Brighton, and South Coast.	1	..	1,133,498	Trespasser (name unknown), run over in a tunnel.
6 Mar.	Ditto	1	..	. .	Jonathan Surtees, engine-driver, came in contact with a bridge while he was imprudently passing along the top of a train in motion.
23 Mar.	Ditto	1	..	. .	George Ranson, plate-layer, run over at night: supposed to have been lying on the rails.
27 Mar.	Ditto . . . . .	..	1	. .	Mr. William Walker, store-keeper in Company's service, while attempting to get into a carriage when the train was starting, slipped, and coming in contact with the step, fractured his leg.
14 May	Ditto	1	..	. .	John Hield, temporary guard, supposed to have left his box while the train was in motion, and to have fallen in the act of opening the door of a second-class carriage.

Date of Accident.	NAME OF RAILWAY.	Number of Persons		Number of Passengers carried during the Half-year ending 30th June, 1849.	Nature and Cause of Accident, taken from the Reports made to the Commissioners of Railways by the Railway Companies.
		Killed.	Injured.		
1849. 23 May	London, Brighton, and South Coast— <i>continued</i> .	..	3	.. . .	As a special train from Epsom races was leaving the West Croydon station, a coupling-chain broke, and a portion of the train ran back 50 or 60 yards down the incline, and another special train from Epsom arriving at the time, came slightly into collision with the last carriage, causing three passengers to be slightly injured.
	Londonderry and Enniskillen.	..	..	54,326	
2 Jan.	London and North Western	..	..	2,750,541	The tire of one of the leading wheels of the engine of an express train from Liverpool flew off; no personal injury sustained.
13 Jan.	Ditto	1	..	. .	William Simpson, servant of Company, slipped in front of a waggon which was being drawn out of a siding, and was run over.
29 Jan.	Ditto	1	..	. .	James Giles, servant of Company, run over while imprudently walking on the line.
11 Feb.	Ditto	1	..	. .	William Gillings, servant of Company, run over while imprudently crossing the railway.
12 Feb.	Ditto	1	..	. .	Alexander Kirkpatrick, servant of Company, run over while imprudently crossing the line during a fog.
16 Feb.	Ditto	1	..	. .	John Maddox, trespasser, run over.
17 Mar.	Ditto . . . . .	..	3	. . .	Three passengers (one had his leg broken) injured in consequence of a wheel-tire of a first-class carriage breaking, causing it and four second-class carriages to be thrown off the line.
19 Mar.	Ditto	1	..	. .	James Ireland, guard, run over while crossing the line during a thick fog.
20 Apr.	Ditto	1	..	. .	William Neale, breaksmen, run over by his train, which was being backed in accordance with his own arrangement with the driver.
26 May	Ditto	1	..	. .	E. Trueman, milk-boy, endeavouring to get on the step of a carriage in motion, fell, and was run over.
15 June	London and South Western (including Windsor, Staines and South Western).	1	..	1,128,528	William Marlow, driver of a horse and cart, struck by a train while he was in the act of crossing the line at a level crossing. Had been warned that the train was approaching.
	Manchester, Buxton, Matlock, and Midlands Junction.	..	..	9,986	
28 Feb.	Manchester, Sheffield, and Lincolnshire.	..	1	842,840	Thomas Potts, servant of Company, fell from a train in motion, and had his leg severely crushed by the wheels of the tender passing over it.
2 Mar.	Ditto	1	..	. .	Richard Copley, porter, crushed between buffers while coupling carriages.
4 Mar.	Ditto . . . . .	..	1	. .	John Hardinge, luggage guard, feet bruised by wheels of waggons which he was attaching to an engine.
19 Mar.	Ditto . . . . .	..	1	. .	G. Smith, servant of Company, injured internally by being crushed between buffers while attaching cattle trucks to a train.
6 Apr.	Ditto	1	..	. .	W. Cleaver, policeman, run over while walking on the line.
1 May	Ditto	1	..	. .	Thomas Hinchliffe, plate-layer, run over while incautiously crossing to his work in front of an approaching train.
	Manchester and Southport Maryport and Carlisle.	..	..	. .	See Lancashire and Yorkshire, for traffic.
11 Jan.	Midland (including Bristol and Birmingham traffic).	..	..	63,889	
23 Jan.	Ditto	1	..	2,252,984	Thomas Reynoldson, fireman, accidentally fell from a train in motion, and was killed (cause unknown).
	Ditto . . . . .	..	..	. .	Passenger train ran into some ballast waggons which had been blown out of a siding at Appleby-bridge, on the Leeds and Bradford line, in consequence of the neglect of pointsmen.
30 Jan.	Ditto	1	..	. .	John Smith, breaksmen, crushed between buffers while incautiously unhooking waggons.
20 Feb.	Ditto	1	..	. .	John Parkins, trespasser, run over at night.
26 Feb.	Ditto	1	..	. .	George Smith, plate-layer, run over while incautiously walking on the line.
13 Mar.	Ditto . . . . .	..	1	. .	James Whiting, goods guard, fell while coupling waggons, and engine passing over him, broke his thigh and cut off three fingers.
24 Mar.	Ditto	1	..	. .	William Organ, contractor's servant, attempting to get upon a goods train in motion, fell, and was run over.

Date of Accident.	NAME OF RAILWAY.	Number of Persons		Number of Passengers carried during the Half-year ending 30th June, 1849.	Nature and Cause of Accident, taken from the Reports made to the Commissioners of Railways by the Railway Companies.
		Killed.	Injured.		
1849.					
26 Mar.	Midland (including Bristol and Birmingham traffic) —continued.	Nil	Nil	...	Leading axle of the engine of a passenger train broke while going over the points at the Mansfield Junction, causing the engine to leave the rails.
12 Apr.	Ditto	1	..	..	Robert Goodacre, gate-keeper, run over at night by a train which was passing Wyverly-gate.
14 Apr.	Ditto	1	..	..	Margaret Dynier, a hawker, run over while trespassing on the line.
3 May	Ditto	1	..	..	Trespasser committed suicide by throwing himself across the rails in front of an approaching train.
17 May	Ditto	2	..	..	Verdict at inquest, "Temporary Insanity." Russell Goldsborough and Thomas Clough, plate-layers, knocked down and run over in a siding by a lime waggon, which was thrown off the rails by another waggon being shunted.
4 Jan.	Midland Great Western (Ireland).	..	..	102,591	Collision; passenger train ran into an engine which was standing at the coke-ovens.
7 May	Monkland	1	..	55,700	David Sharp, breaksman, crushed between mineral waggons, while leaping from a train in motion.
	Newcastle and Carlisle . . . . .	..	..	243,124	See Eastern Counties, for traffic.
	Newmarket . . . . .	..	..	...
	Newry, Warrenpoint, and Rostrevor.	..	..	14,016	See Eastern Counties, for traffic.
	Norfolk . . . . .	..	..	...
10 Apr.	North British	1	..	417,429	Peter Freeland, labourer on the line, having remained too long at work, as a train was approaching, was run over by it.
31 Jan.	North Staffordshire	1	..	273,615	Thomas Ford, porter, run over while incautiously crossing in front of an approaching engine.
16 Feb.	Ditto	1	..	...	John Copestick, plate-layer, run over while incautiously walking on the line.
Feb.	Ditto	1	..	..	Edward Phillips, servant of contractor, attempting to get on an engine in motion, fell, and was run over.
8 Feb.	North Union	1	..	..	Henry Augur, fireman in East Lancashire Railway Company's service, over-reached himself while attempting to attach a waggon to his tender, and, falling off, was run over.
24 May	Ditto . . . . .	..	1	..	Charles Haselden, foreman of plate-layers; head came in contact with a bridge as he was standing on the top of a carriage in motion.
	North Western . . . . .	..	..	14,596	..
	Scottish Central . . . . .	..	..	143,381	
	Scottish Midland Junction . . . . .	..	..	69,751	
	Shrewsbury and Birmingham.	..	..	11,439	
22 Jan.	Shrewsbury and Chester	1	..	170,961	William Parry, passenger, run over while imprudently crossing the line at a station.
8 Mar.	Ditto	1	..	..	— Jones, servant of contractor, run over while walking across the line in front of an approaching train.
	Shropshire Union Railway and Canal Company . . . . .	..	..	14,508	— Evans, stoker, killed, and guard and engine-driver injured by the bursting of the boiler of an engine attached to a goods train.
27 June	South Devon	1	2	249,683	
26 Feb.	South Eastern (including Greenwich line).	1	..	1,975,319	Arthur Barham, trespasser, run over.
	South Staffordshire . . . . .	..	..	49,585	William Towers, trespasser, run over; had been warned off the previous day.
20 Jan.	St. Helen's Canal and Railway.	1	..	59,775	
27 Mar.	Stockton and Darlington (including Middlesboro' and Redcar, Wear Valley, Bishop Auckland and Weardale).	1	..	170,438	Hannah Beaton, attempting to cross the railway at a level crossing, though warned not to do so, as a train was approaching, was run over, and died on the following day.
21 Apr.	Ditto	1	..	..	John Bowman, plate-layer, attempting to get upon a train of waggons in motion, fell, and was run over.
18 May	Ditto	1	..	..	Matthew Robinson, residing close to the railway, run over while incautiously crossing the line.
2 Feb.	Stockton and Hartlepool, (including Clarence).	2	..	46,130	Richard Holmes, engineman, and John Holmes, fireman, killed in consequence of the train running off the line.
22 June	Taff Vale (including Aberdare).	1	..	119,207	James Griffiths, engine-driver, came in contact with a bridge while he was incautiously screwing up the feed-pipe of his engine, which was in motion at the time.

Date of Accident.	NAME OF RAILWAY.	Number of Persons		Number of Passengers carried during the Half-year ending 30th June, 1849.	Nature and Cause of Accident, taken from the Reports made to the Commissioners of Railways by the Railway Companies.
		Killed.	Injured.		
1849.					
22 June	Ulster . . . . .	..	..	243,182	..
	Waterford and Kilkenny .	..	..	17,373	
20 Jan.	Waterford and Limerick .	1	..	46,083	George Russell, a second-class passenger, having imprudently got out on the footboard of the carriage while the train was in rapid motion, fell off.
	West Cornwall. . . . .	..	..	31,714	..
	Whitehaven Junction . .	..	..	83,435	
	Wilsontown, Morningside, and Coltness.	..	..	..	No passenger traffic during the half-year.
	Wilts, Somerset, and Weymouth.	..	..	..	Traffic included in Great Western.
	Windsor, Staines, and South Western.	..	..	..	Traffic included in London and South Western.
	Wishaw and Coltness . .	..	..	..	Traffic included in Caledonian.
3 Mar.	York, Newcastle, and Berwick.	2	..	1,516,876	Engine-driver and fireman killed in consequence of the down-express train running off the rails between Darlington and Ferry-hill.
16 June	Ditto . . . . .	..	14	..	Pilot-engine ran into a passenger train, which was standing at the Springfield station, causing injury to 14 passengers.
14 Feb.	York and North Midland .	1	..	571,690	Trespasser, of weak intellect, ran over.
12 Mar.	Ditto	1	..	..	Robert Snerr, a second-class passenger, attempting to get from one compartment of the carriage to another, came in contact with a telegraph post, and was killed.
15 June	Ditto . . . . .	..	1	..	William Thackrey, fireman, thrown from a waggon while shunting train, and had his foot crushed by the wheels of the tender.
	Total for Half-Year .	96	75		

(HALF-YEAR ENDING 31st DECEMBER, 1849.)

Date of Accident.	NAME OF RAILWAY.	Number of Persons		Number of Passengers carried during the Half-year ending 31st Dec, 1849.	Nature and Cause of Accident, taken from the Reports made to the Commissioners of Railways by the Railway Companies.
		Killed.	Injured.		
1849.					
	Aberdeen . . . . .	..	..	..	See "Taff Vale."
	Aberdeen . . . . .	..	..	173,155	See "Aberdeen."
	Arbroath and Forfar . .	..	..	..
	Androsman . . . . .	..	..	62,453½	
	Bedford . . . . .	..	..	..	See "London and North Western."
	Belfast and Ballymena . .	..	..	188,511	
	Belfast and County Down.	..	..	114,368	
	Birkenhead, Lancashire, and Cheshire Junction.	..	..	209,756	
	Bodmin and Wadebridge .	..	..	1,698	
	Bolton, Blackburn, Clitheroe, and West Yorkshire.	..	..	131,579	
	Bristol and Exeter . . .	..	..	315,429	
	Canterbury and Whitstable	..	..	..	See "South Eastern."
16 Aug.	Caledonian	1	..	513,876	Matthew M'Morran, breaksman, incautiously standing on his van, was thrown off by the train starting.
28 Aug.	Ditto	1	..	..	William Graham, goods breaksman, standing on top of train, contrary to regulations, came in contact with a bridge.
29 Aug.	Ditto . . . . .	..	1	..	George Tiffin, breaksman, fell while uncoupling waggon, and train passed over his arm.
8 Nov.	Ditto . . . . .	..	1	..	W. Mitchell, passenger, stepping from a train before it had stopped, fell, and broke his leg.
6 Dec.	Ditto . . . . .	..	1	..	John M'Neill, passenger, struck by a train as he was imprudently crossing in front of it, at the Coatbridge station, and severely injured.

Date of Accident.	NAME OF RAILWAY.	Number of Persons		Number of Passengers carried during the Half-year ending 31st Dec., 1849.	Nature and Cause of Accident, taken from the Reports made to the Commissioners of Railways by the Railway Companies.
		Killed.	Injured.		
1849. 7 Dec.	Caledonian— <i>continued</i> .	1	..	. .	Samuel M'Hutcheon, mineral breaksman, jerked off a mineral train on which he was carelessly riding.
5 Nov.	Chester and Holyhead. .	1	..	185,912	John Thomas, an old man, very deaf and nearly blind, run over while crossing the line at a footpath crossing.
9 Sept.	Clarence . . . . .	..	1	13,494	J. M'Millan, passenger, jumping from a train in motion, fell, and the wheels passing over, broke his arm and otherwise injured him.
	Cockermouth and Workington.	..	..	29,382	
	Colchester, Stour Valley, Sudbury, and Halstead.	..	..	. .	See "Eastern Union."
14 Sept.	Cork and Bandon	1	..	22,234	Ellen Lynch, trespasser, run over.
	Drumpeller . . . . .	..	..	. .	Passengers were not conveyed upon this line during the half-year.
24 Nov.	Dublin and Belfast Junction	..	..	49,539	
	Dublin and Drogheda . .	1	..	217,428	John Ellison, station-master, run over while incautiously crossing in front of an approaching train.
5 Aug.	Dublin and Kingstown. .	..	1	1,323,043	Miss Jamea, a passenger; leg fractured while attempting to get into a train which was being placed.
	Dundalk and Enniskillen .	..	..	85,585	
	Dundee and Arbroath . .	..	..	. .	See "Dundee and Perth and Aberdeen Railway Junction."
20 Nov.	Dundee and Newtyle . .	..	..	. .	Ditto.
	Dundee and Perth and Aberdeen Railway Junction.	1	1	331,401	John Craig killed, and Charles Balfour severely injured; both in service of the Company. While attaching a waggon to a goods train, a passenger train came up and threw the waggon off the line, killing Craig and injuring Balfour.
7 July	East Anglian . . . . .	..	..	132,730	
	Eastern Counties	1	..	1,767,353	Tebbitt, a trespasser, run over while crossing in front of an approaching train.
12 Oct.	Ditto	1	..	. .	Humphry O'Leary, signal-man, run over while crossing in front of an approaching train.
27 Nov.	Ditto	1	..	. .	Crowe, an intended passenger, incautiously crossing the line at a station, was run over and killed.
8 Dec.	Ditto	1	..	. .	Henry Goby, guard, accidentally fell from a train in motion.
16 Dec.	Ditto	1	..	. .	William North, guard, attempting to get upon a train in motion, fell, and was run over.
28 Dec.	Ditto . . . . .	..	1	. .	J. Harman, engine-driver, injured on the knee, in consequence of his engine falling over when passing a culvert, which had been damaged by a high tide.
13 Dec.	Eastern Union.	Nil	Nil	193,163	Passenger train ran into a ballast truck which had been improperly left on the line. Engine, tender, and break van thrown off the rails.
3 July	East Lancashire	1	1	861,091	James Birch, fireman, killed, and Jonathan Cheesman, driver, injured, in consequence of a luggage train running into some waggons which had broken away from another luggage train.
11 July	Ditto	1	..	. .	John Fielding, servant of Company, incautiously taking luggage from a train in motion, fell, and was run over.
11 July	Ditto . . . . .	..	1	. .	Archer Martin, station-master, and acting guard at the time, while standing up on guard's box, came in contact with a bridge.
25 Aug.	Ditto	1	..	. .	J. Quintam, trespasser, run over.
25 Aug.	Ditto	1	..	. .	F. Duckworth, bank-rider at Accrington, fell from the edge of a waggon and was run over.
2 Sept.	Ditto	1	..	. .	J. Lang, fireman, supposed to have been run over while attempting to get upon a train in motion.
26 Nov.	Ditto . . . . .	..	6	. .	A Lancashire and Yorkshire train of coal-waggons overtook and ran into an East Lancashire passenger train in the tunnel near the Bootle station, causing injury to six passengers.
	East Lincolnshire . . . .	..	..	94,695	
	East and West Yorkshire Junction.	..	..	26,178	
15 Oct.	Edinburgh and Bathgate .	..	..	4,514	
	Edinburgh and Glasgow .	..	1	521,953	John Bucklern, guard, in service of Scottish Central Company, came in contact with a bridge while he was imprudently standing on the top of a carriage adjusting luggage.

Date of Accident.	NAME OF RAILWAY.	Number of Persons		Number of Passengers carried during the Half-year ending 31st Dec., 1849.	Nature and Cause of Accident, taken from the Reports made to the Commissioners of Railways by the Railway Companies.
		Killed.	Injured.		
1849.					
30 Oct.	Edinburgh and Glasgow— <i>continued.</i>	1	..	. .	James Scringer, porter, run over while imprudently crossing in front of an approaching goods train.
13 Nov.	Edinburgh, Perth, and Dundee.	..	1	758,360	W. Mochrie, tinsmith, in service of Company, fell from a truck in motion, and was slightly injured.
	Furness . . . . .	..	..	13,144	Passengers were not conveyed upon this line during the half-year.
	General Terminus and Glasgow Harbour.	..	..	. .
	Glasgow, Barrhead, and Neilston Direct.	..	..	130,679	
	Glasgow, Dumfries, and Carlisle.	..	..	54,721	
	Glasgow, Kilmarnock, and Ardrossan.	..	..	. .
	Glasgow, Paisley, and Greenock.	..	..	443,686	No passengers conveyed during the half-year.
18 Oct.	Glasgow, Paisley, Kilmarnock, and Ayr.	1	..	514,807	Thomas Irvin, stoker, fell from train, and was run over.
9 Nov.	Ditto	1	..	. .	Trespasser, run over at night.
11 July	Glasgow and Paisley Joint Railway.*	..	13	. .	The tire of a wheel of a third-class carriage breaking, threw the following second-class carriage off the line, causing injury to its occupants.
22 Sept.	Great Northern	1	..	223,165	Thomas Neville, plate-layer, run over in a cutting while incautiously standing on the line.
19 Oct.	Ditto	1	2	. .	Wright, plate-layer, killed, and Johnson and Marriott, also plate-layers, injured, by being struck by a train while they were endeavouring to avoid an engine coming from the opposite direction.
10 Dec.	Ditto	Nil	Nil	. .	Collision at the Boston station, between a passenger train coming from Lincoln and a goods train starting for Lincoln.
14 Dec.	Ditto	1	..	. .	William Jackson, plate-layer, run over while shunting waggons.
27 Dec.	Ditto	1	..	. .	Mr. William Davey, clerk, in charge of Legbourne station, crushed while imprudently attempting to pass between a goods train and a waggon which was about being attached to the train.
	Great North of England .	..	..	. .	See "York, Newcastle, and Berwick."
	Great North of England, Clarence and Hartlepool Junction.	..	..	. .	Ditto.
23 Aug.	Great Southern and Western	1	..	227,195	James Saul, labourer on the line, crushed between a lorry and a gate.
1 Sept.	Ditto . . . . .	..	1	. .	J. Maher, porter, leg crushed by wheel while coupling tender to the engine.
3 Sept.	Ditto	1	..	. .	W. Mark, in service of Company, incautiously descending from an engine in motion.
16 Oct.	Ditto	1	..	. .	Christopher Hickey, porter, fell, and was run over, while endeavouring to stop a waggon in motion.
28 Nov.	Ditto	1	..	. .	James O'Connor, porter, fell from a train which he was loading.
28 Nov.	Ditto	1	..	. .	John Crosbie, labourer, in service of Irish South Eastern Railway Company, run over while incautiously crossing the line.
7 July	Great Western (including Wilts, Somerset, and Weymouth)	1	..	1,220,507½	Thomas Kent, policeman, run over by a Bristol and Birmingham train while incautiously crossing the line.
17 Nov.	Ditto	1	..	. .	Watts, an old man, run over while attempting to cross the line between Wantage and Farringdon-road stations.
3 Dec.	Ditto . . . . .	..	1	. .	Joseph Williams, struck by a mail train while he was incautiously crossing the line at a level crossing.
	Hartlepool Dock & Railway	..	..	. .	See "York, Newcastle, and Berwick."
	Hull and Selby . . . . .	..	..	. .	See "York and North Midland."
	Irish South Eastern . . .	..	..	19,354	See "Glasgow, Paisley, Kilmarnock, and Ayr."
	Kendal and Windermere .	..	..	68,592	
	Kilmarnock and Troon . .	..	..	. .
	Lancaster and Carlisle .	..	..	223,164	
	Lancaster and Preston Junction.	..	..	. .
7 July	Lancashire and Yorkshire	1	..	2,793,764	Thomas Scott, guard; supposed to have come in contact with a bridge while he was imprudently standing on the top of a carriage.

* The Glasgow and Paisley Joint Railway is the property of, and is worked by, the "Glasgow, Paisley and Greenock," and the "Glasgow, Paisley, Kilmarnock and Ayr" Railway Company.

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		Killed.	Injured.		
1849.					
20 July	Lancashire and Yorkshire —continued.	1	Adam Lord, plate-layer, run over while imprudently crossing the line.
28 July	Ditto	1	. .	Alexander Brinning, guard, passing from one carriage to another to put on a break, fell, and received some contusions on the head.
31 July	Ditto	1	John Dockerty, contractor's labourer, struck by an engine while he was incautiously standing on the line.
4 Aug.	Ditto	1	John Stirrett, labourer in service of Company, jumping from a ballast-waggon in motion, fell, and was run over.
9 Aug.	Ditto	1	. .	— Waddingham, a pointsman, in service of East Lancashire Company, attempting to get upon a train in motion, fell, and wheels passed over his ankle.
18 Aug.	Ditto	1	James Yates, ticket collector, in service of East Lancashire Company, run over while incautiously crossing the railway at the Bootle station.
19 Aug.	Ditto	2	. .	An excursion train running into a passenger train at the Rochdale station; one passenger had his leg broken, another his spine injured.
20 Aug.	Ditto	1	Henry Draycott, porter, attempting to get out of a train in motion, came in contact with a bridge.
2 Sept.	Ditto	1	Henry Park, guard, coming in contact with a bridge while he was imprudently standing on the top of a train in motion.
6 Sept.	Ditto	1	. .	William Mort, servant of Liverpool Corporation; arm crushed between buffers of waggons, owing to his inattention to signals.
19 Sept.	Ditto	1	Michael Drury, breakman, run over while shunting waggons.
20 Sept.	Ditto	1	H. Whittaker, passenger in charge of cattle, while riding, contrary to regulations, on the top of a cattle truck, came in contact with a bridge.
20 Sept.	Ditto	Nil	Nil	. .	Collision between a special train from Lythan and a train of empty carriages going to Lythan (being a single line of rails); no person injured.
26 Sept.	Ditto	1	John Redfern, workman in service of Company, got on line from some cause unknown, and was run over by an express train.
11 Oct.	Ditto	1	. .	George Mallinson, luggage-guard; arm crushed by crank of engine while he was sanding the rails.
12 Oct.	Ditto	1	James Charlesworth, stonemason in employ of contractor, imprudently standing on line, was run over.
14 Oct.	Ditto	1	. .	C. Laws, engine-driver, while sanding rails, which were slippery, had his arm bruised by the connecting rod of the engine.
17 Oct.	Ditto	1	. .	D. Bury, engine-cleaner; leg fractured by an engine, which he was uncoupling, passing over it.
18 Oct.	Ditto	1	. .	James Worthington, servant of Company, crushed between buffers while carelessly coupling waggons.
23 Oct.	Ditto	1	. .	M. Howarth, a female passenger by a London and North Western train, knocked down by a goods train while imprudently crossing the line at the Park station; head severely injured.
23 Oct.	Ditto	1	Joseph Richardson, passenger, run over, and killed. It is supposed that he jumped from the train while it was in motion, as the train had passed the station for which he had taken his ticket.
23 Oct.	Ditto	1	. .	Thomas Garth, a carter, crossing with a horse and cart at a level crossing, was struck by his cart, which had come in contact with a passing engine; chest injured.
26 Oct.	Ditto	1	. .	James Singleton, coal-train guard, accidentally fell from a train, and injured his head.
26 Oct.	Ditto	1	. .	Philip Blackmore, passenger guard, while leaning over, came in contact with a horse-box at a siding; head injured.
2 Nov.	Ditto	1	. .	William Bibby, fireman in employ of coal merchants, while shunting his engine, was knocked down, and injured by it.
3 Nov.	Ditto	4	. .	Four passengers injured in consequence of the train by which they were travelling running into a goods train at the Heaton Lodge junction.

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		Killed.	Injured.		
1849.					
12 Nov.	Lancashire and Yorkshire —continued.	1	Thomas Weaver, passenger, came in contact with a bridge while incautiously leaning out of a carriage window, pointing his gun in sport at some person.
16 Nov.	Ditto	1	..	. .	John Lawton, servant at Clarence Hotel, Wigan, run over while crossing the line. (Trespasser.)
27 Nov.	Ditto . . . . .	..	1	. .	James Tisaher, fireman; head injured while working about waggons.
27 Nov.	Ditto	1	..	. .	Thomas Sharples, porter, run over while incautiously crossing the line.
8 Dec.	Ditto	1	..	. .	James Holt, night porter, accidentally crushed between buffers of two trucks.
13 Dec.	Ditto	1	..	. .	Philip Baker, trespasser, run over.
13 Dec.	Ditto . . . . .	..	1	. .	Patrick Cullens, breaksman, severely crushed between buffers while shunting waggons.
	Leeds and Bradford . . .	..	..	. .	See "Midland."
1 Aug.	Leeds and Thirsk . . .	1	..	127,540	William Longfellow, an old man of 85, crossing the line at a crossing, was run over by a passenger train.
20 Sept.	Ditto	1	..	. .	James Clarke, stoker, struck by a piece of iron piping, thrown from a passenger train, which came in collision with a goods train near the Horsforth station.
	Liskeard and Caradon . .	..	..	. .	Passengers were not conveyed upon this line during the half-year.
	Liverpool, Crosby, and Southport.	..	..	63,027	
	Llanelly Railway and Dock	..	..	2,946	
	Llynvi Valley . . . . .	..	..	. .	Passengers were not conveyed upon this line during the half-year.
3 July	London and Blackwall . .	..	..	1,200,414	Passengers slightly bruised, in consequence of a train running into the Blackwall station at too great a speed.
27 July	Ditto	1	..	. .	John Lakey, labourer, run over while trespassing on the rails.
7 Nov.	Ditto . . . . .	..	16	. .	An up-train standing at Stepney station, waiting for the Bow train, was run into by an up goods train from Poplar, causing severe injuries to five passengers, and slight injuries to eleven other passengers.
	London and Greenwich . .	..	..	1,126,237	
8 July	London, Brighton, and South Coast.	1	..	1,525,891	Mrs. Haggett, a passenger, imprudently crossing at the Norwood station, although cautioned that a train was approaching, was run over and killed.
12 Aug.	Ditto	1	..	. .	James Mills, fireman, attempting to get upon an engine, fell, and was run over.
13 Aug.	Ditto	1	..	. .	John Cowley, breaksman, fell while shunting waggons, and was run over.
6 Oct.	Ditto	1	..	. .	William Oliver, passenger, having alighted at the Goring station, walked to the incline at the end of the platform, where he fell, and was run over by some of the carriages.
	Londonderry and Enniskillen.	..	..	53,252	
6 Aug.	London and North Western	..	5	3,387,743	Collision near Warrington, between a passenger train and a goods train, causing injury to five passengers.
	Ditto . . . . .	..	1	. .	A passenger slightly injured in the eye, in consequence of the up mail train from Liverpool running into a siding, the points of which had been left open by the neglect of the pointsman, and coming in contact with some empty cattle-waggons.
14 Nov.	Ditto . . . . .	..	3	. .	Passengers slightly injured in consequence of the train running into some empty waggons, which had broken loose from a cattle-train on the Whiston incline.
15 Nov.	London and South-Western (including Windsor, Staines, and South Western), Richmond to Windsor.	1	..	1,384,421	D. Macarthur, passenger, attempting to get into a train in motion, fell between carriages and the platform at the Clapham-common station.
19 Nov.	Ditto	1	A gentleman of unsound mind laid himself down on the rails as an engine was approaching, and was run over.
	Lowestoft Railway and Harbour.	See "Eastern Counties."

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		Killed.	Injured.		
1849. 19 Nov.	Manchester, Buxton, Matlock, and Midlands Junction.	58,757	
7 July	Manchester, Sheffield, and Lincolnshire.	..	1	1,131,343	Joseph Tilloston, luggage guard, knee crushed between buffers, while shunting waggons.
9 July	Ditto	1	..	. .	John Arrowsmith, trespasser, crushed between buffers while passing between waggons.
11 July	Ditto . . . . .	..	1	. .	John Caylor, servant of contractor, fell while endeavouring to avoid an engine in a tunnel, and had his ankle crushed by the wheels.
3 Sept.	Ditto	1	..	. .	J. Wolstenholme, servant of Company, crushed between buffers while moving waggons in a shed.
12 Sept.	Ditto	1	..	. .	W. Harrop, guard, while walking, contrary to orders, along foot-boards of carriages in motion, came in contact with a temporary stage.
19 Sept.	Ditto . . . . .	..	1	. .	E. Spence, engine-driver, injured between buffers while incautiously moving trucks.
22 Sept.	Ditto . . . . .	..	1	. .	D. Williamson, goods porter, severely injured while moving waggons.
1 Oct.	Ditto	Nil	Nil	. .	Wheel-tire of a passenger carriage breaking.
5 Oct.	Ditto . . . . .	..	1	. .	E. Hobson, servant of Company, fell, and was run over while attempting to get upon an engine in motion. Right knee and left foot fractured.
13 Oct.	Ditto . . . . .	..	1	. .	John Gould, cattle-drover, getting off before the train had stopped, had both legs badly crushed by one of the waggons.
15 Oct.	Ditto	1	..	. .	John Allen, plate-layer, run over while imprudently passing between waggons which were being shunted.
30 Oct.	Ditto . . . . .	..	1	. .	Joseph Birtlett, guard of goods train, fell from waggons on which he was carelessly lying, and was severely injured.
5 Nov.	Ditto . . . . .	..	3	. .	Thomas Owen, engine-driver, Charles Caunt, and Thomas Crosskill, servants of Company, injured in consequence of a collision between a goods train and a ballast train, caused by Thomas Owen neglecting signals.
Nov.	Ditto	1	..	. .	James Jackson, guard, run over while attempting to take a box from a train in motion.
17 Nov.	Ditto	1	..	. .	John Hancock, passenger, run over while incautiously crossing at the station.
28 Nov.	Ditto	1	..	. .	George Lees, passenger, attempting to get out of a train in motion, fell, and was run over.
19 Dec.	Ditto	2	..	. .	W. O'Brien and James Kennedy, contractor's bricklayers, run over by a Great Northern passenger train, while (as is supposed) they were about getting on a coal train.
23 Dec.	Manchester and Southport	..	..	. .	See "Lancashire and Yorkshire."
	Manchester, South Junction and Altrincham.	..	1	350,221	Abraham Gabbitt, stoker, while oiling his engine in motion, fell back on the road, and dangerously injured.
	Maryport and Carlisle.	..	..	75,800	<i>This was the number of passengers conveyed during the corresponding half-year in 1848.</i>
	Middlesboro' and Redcar .	..	..	. .	See "Stockton and Darlington."
13 Aug.	Midland (including Leeds and Bradford)	1	..	2,658,903	— Crick, carpenter, run over while incautiously standing on the railway.
18 Aug.	Ditto	1	..	. .	Joseph Burton, plate-layer, run over while incautiously crossing the railway.
22 Aug.	Ditto	1	..	. .	Thomas Harrison, servant of Company, standing against a set of points when a train was passing, was struck by the lever of the points, and thrown under the carriages.
24 Aug.	Ditto	1	..	. .	Passenger train running into a mineral train at the Leicester and Swannington Junction, owing to signal not being lighted up. Man in mineral train injured by jumping out.
16 Nov.	Ditto . . . . .	..	2	. .	Passenger train running into a goods train standing at the Keighley station, causing slight injuries to two passengers.
24 Nov.	Ditto	1	..	. .	Henry Kirke, servant of Eastern Counties Railway Company, crushed between buffers while assisting to load a cattle-train.
26 Nov.	Ditto	1	..	. .	William Pillsworth, acting as extra guard, accidentally fell from his break, and was run over.

Date of Accident.	NAME OF RAILWAY.	Number of Persons		Number of Passengers carried during the Half-year ending 31st Dec., 1849.	Nature and Cause of Accident, taken from the Reports made to the Commissioners of Railways by the Railway Companies.
		Killed.	Injured.		
1849.					
30 Nov.	Midland (including Leeds and Bradford)— <i>continued</i> .	..	1	. .	Passenger train ran into a guard's break-van at a station; one passenger slightly cut over the eye.
1 Dec.	Ditto	1	..	. .	John Jones, run over while trespassing on the line at night.
6 Dec.	Ditto	Nil	Nil	. .	Portion of a mail train thrown off the line, in consequence of damage caused to the railway by the overflow of the River Trent.
17 Dec.	Ditto	1	..	. .	— Fawcett, daughter of a plate-layer, run over while walking along the line, after having taken dinner to her father.
21 Dec.	Ditto	1	..	. .	James Wheatley, a stranger, crossing the yard at the Nottingham goods station, with a bag of potatoes on his back, was run over and killed by an engine.
21 Dec.	Ditto . . . . .	..	1	. .	W. Bakewell, engine-cleaner, incautiously standing on the line, was knocked down by an engine, and had his hand cut off.
22 Dec.	Ditto . . . . .	..	1	. .	C. Pears, goods porter, fell while moving waggons, and had his leg broken by the wheels.
31 Dec.	Ditto . . . . .	..	1	. .	— Wells, breaksman, moving along a train in motion, came in contact with a bridge, and was cut on the head.
31 Dec.	Ditto	1	..	. .	Daniel Nobbs, fireman, incautiously standing between the two lines, was struck by an engine and thrown under a train of waggons, which were passing on the other line of rails.
	Midland Great Western (Ireland).	..	..	114,146	
	Mold . . . . .	..	..	17,391	
	Monkland . . . . .	..	..	81,055	
	Monmouthshire Railway and Canal.	..	..	. .	Passengers were not conveyed on this line during the half-year.
	Newcastle and Carlisle	..	..	279,475	
	Newmarket . . . . .	..	..	14,638	
	Newry, Warrenpoint, and Rostrevor.	..	..	65,173	
5 Oct.	Norfolk . . . . .	..	..	. .	See "Eastern Counties."
	North British	Nil	Nil	596,873	Collision between a special passenger train and a goods train, owing to delay of a porter in making the proper signal.
7 Sept.	Northern and Eastern . .	..	..	. .	See "Eastern Counties."
	North Staffordshire . .	1	..	443,362	Samuel Tunncliffe, gatekeeper, run over while incautiously crossing the line.
12 Oct.	Ditto	1	..	. .	George Foden, porter, crushed between buffers while shunting waggons.
28 Nov.	Ditto	1	..	. .	John Morris, plate-layer, run over while incautiously walking on the line.
27 July	North Union (Passenger traffic included in "Lancashire and Yorkshire," and "London and North Western" Returns.)	..	1	. .	Mr. Smith, a passenger by special train (only one carriage attached to the engine), had his arm slightly bruised, it is supposed, in consequence of the engine jumping off the rails, the speed being very great at the time.
17 Oct.	Ditto . . . . .	..	1	. .	William Woods, trespasser, injured by coal-waggons while crossing the line.
	North Western . . . . .	..	..	57,863	
	Preston and Longridge . .	..	..	20,594	
	Reading, Guildford, and Reigate.	..	..	. .	See "South Eastern."
	Saundersfoot Railway and Harbour.	..	..	. .	Passengers were not conveyed upon this line during the half-year.
	Scottish Central . . . . .	..	2	207,792	Passenger, with a child in his arms, fell from the ledge of a bridge at the Auchterarder station, having got upon it from the train, mistaking it for the platform.
	Scottish Midland Junction	..	..	95,942	
	Sheffield, Rotherham, Barnsley, Wakefield, Huddersfield, and Goole.	..	..	. .	No passengers conveyed during the past year.
	Shrewsbury and Birmingham.	..	..	62,709	
	Shrewsbury and Chester .	..	..	174,655	
7 Aug.	Shropshire Union Railway and Canal.	1	..	74,107	Isaac Nicholson, guard, fell from roof of a carriage, on which he was riding, contrary to orders.
	South Devon . . . . .	..	..	250,657	

Date of Accident.	NAME OF RAILWAY.	Number of Persons		Number of Passengers carried during the Half-year ending 31st Dec., 1849.	Nature and Cause of Accident, taken from the Reports made to the Commissioners of Railways by the Railway Companies.
		Killed	Injured.		
1849.					
21 July	South Eastern	1	..	1,678,451	John Broome, porter, run over while incautiously standing on the line.
14 Aug.	Ditto	1	..	. .	Michael Barrow, contractor's servant, run over while incautiously walking on the line.
19 Aug.	Ditto	1	..	. .	Anna Murphy, passenger, incautiously walking too close to the edge of the platform at the Woolwich station while the train was in motion, fell, or was dragged off by one of the carriages, and was run over.
11 Sept.	Ditto	1	..	. .	John Powell, servant of Telegraph Company, run over while incautiously lying on the line.
13 Sept.	Ditto	1	..	. .	Daniel Munn, porter run over while incautiously crossing the line.
10 Oct.	Ditto	1	..	. .	Joseph Street, servant of Company, fell, and was run over while shunting waggons.
24 Nov.	Ditto . . . . .	..	1	. .	Sir Norton Knatchbull, passenger, stepping from a train before it had stopped, fell, and broke his arm.
20 Sept.	South Staffordshire. . .	1	..	82,121	Charles Mayall, gatekeeper, run over while incautiously running across the line.
29 Nov.	Ditto . . . . .	..	1	. .	John Richardson, extra guard, in attempting to get upon an engine in motion, fell, and had his foot crushed by wheels.
	St. Helen's Canal and Railway.	..	..	75,645	
	South Yorkshire, Doncaster and Goole.	..	..	9,754½	
27 July	Stockton and Darlington- (including Middlesboro' and Redcar, Wear Valley, Bishop Auckland and Weardale).	..	1	198,685	John Robinson, fireman, while applying break, fell, and had his arm fractured by wheels passing over it.
30 Aug.		..	1	. .	George Smith, trespasser, fell in attempting to get upon a train in motion, and waggon-wheels fractured his arm.
15 Oct.	. . . . .	1	..	. .	Thomas Murphy, coke-burner at colliery adjoining railway, run over while attempting to cross the line. (Trespasser.)
	Stockton and Hartlepool .	..	..	41,238	
12 Sept.	Taff Vale (including Aberdare).	1	..	115,886	D. Jenkins, breaksman of mineral train, fell while uncoupling waggons, and was run over.
	Taw Vale Railway and Dock.	..	..	. .	No passengers conveyed.
	Ulster . . . . .	..	..	280,049	
	Waterford and Kilkenny .	..	..	16,134	
	Waterford and Limerick .	..	..	42,341	
	Wear Valley . . . . .	..	..	. .	See "Stockton and Darlington."
	West Cornwall . . . . .	..	..	30,471	
	West London . . . . .	..	..	. .	See "London and North Western."
	Whitehaven Junction . .	..	..	92,490	
13 Oct.	Whitehaven and Furness Junction.	1	1	36,625	Engine ran off the line, and entering a house, killed a child, Jane Pennington, and injured another child of the same name.
	Wilsontown, Morningside, and Coltness.	..	..	. .	No passengers carried during this half-year.
	Wilts, Somerset, and Weymouth.	..	..	. .	See "Great Western."
	Windsor, Staines, and South Western (Richmond to Windsor).	..	..	. .	See "London and South Western."
8 Dec.	York and North Midland .	1	..	702,375	John Season, run over while trespassing on rails in a goods yard.
24 Dec.	Ditto	1	..	. .	Robert Skelton, a pauper, threw himself across the rails in front of an approaching mail train, and was run over. (Verdict, "Temporary insanity.")
2 July	York, Newcastle, and Berwick.	..	1	1,613,123	J. Todd, trespasser, knocked down by a train while he was walking along the line.
30 July	Ditto . . . . .	..	1	. .	Nicholas Elliott, fireman, attempting to get on a tender in motion, fell, and had his foot crushed by the wheels.
1 Aug.	Ditto	1	..	. .	Elizabeth Wilson, trespasser, run over.
1 Aug.	Ditto	1	..	. .	Margaret Garrett, six years old, trespassing unperceived among waggons, was knocked down and run over.
7 Aug.	Ditto . . . . .	..	1	. .	Heslop, fishwoman, a passenger, attempting to get upon a train in motion, was crushed between the carriages and the platform.

Date of Accident.	NAME OF RAILWAY.	Number of Persons		Number of Passengers carried during the Half-year ending 31st Dec., 1849.	Nature and Cause of Accident, taken from the Reports made to the Commissioners of Railways by the Railway Companies.
		Killed.	Injured.		
1849.					
13 Aug.	York, Newcastle, and Berwick— <i>continued</i> .	1	..	. .	Elizabeth Coulthard, a girl five years old, run over while trespassing.
18 Aug.	Ditto . . . . .	..	1	. .	Elizabeth Robson, trespasser, struck by an engine; arm bruised and head cut.
20 Aug.	Ditto	1	..	. .	Robert Greggs, passenger, attempting to get into a train in motion, fell, and was run over.
25 Aug.	Ditto	1	..	. .	John M'Connell, run over while trespassing.
25 Aug.	Ditto . . . . .	..	1	. .	Thomas German, child, son of a coal-porter, struck by a coal-train while trespassing.
3 Sept.	Ditto	1	..	. .	Robert Richardson, trespasser, attempting to get upon a train in motion, fell, and was run over.
4 Sept.	Ditto	1	..	. .	Thomas Lamb, trespasser, run over.
5 Sept.	Ditto	1	..	. .	M. Thompson, goods-guard, thrown from his train in consequence of its coming in violent contact with a truck which was about being attached to the train.
6 Sept.	Ditto	1	..	. .	Thomas Davison, assistant plate-layer, struck by a train while he was incautiously standing on the line.
23 Sept.	Ditto	1	..	. .	Alexander Binney, trespasser, run over.
6 Oct.	Ditto	1	..	. .	J. Lonsdale, trespasser, run over.
13 Oct.	Ditto	1	..	. .	Thomas Hausty, trespasser, run over.
10 Dec.	Ditto	1	..	. .	Robert Billsborrow, plate-layer, run over while incautiously stepping between an engine and some wagons which were attached to the engine by a long chain.
21 Dec.	Ditto	1	..	. .	Thomas Mullins, trespasser, run over.
24 Dec.	Ditto . . . . .	..	1	. .	Thomas Forster, plate-layer, leg broken by wire rope at the Seaton engine.
26 Dec.	Ditto	1	..	. .	W. Smith, trespasser, run over.
	Total for Half-year .	106	112		

COMPARATIVE STATEMENT, showing the Number and Description of Persons Killed and Injured on all the Railways open for Traffic in the United Kingdom during the Years 1848 and 1849, together with the Number of Passengers conveyed, and the Length of Railway open during the same Periods.

DESCRIPTION OF PERSONS.	Year ending 31st Dec., 1848.		Year ending 31st Dec., 1849.	
	Killed.	Injured.	Killed.	Injured.
Passengers killed and injured from causes beyond their own control .	9	128	5	84
Passengers killed and injured owing to their own misconduct or want of caution	12	7	18	12
Total passengers killed and injured	21	135	23	96
Servants of companies or of contractors killed and injured from causes beyond their own control	13	32	14	12
Servants of companies or of contractors killed and injured owing to their own misconduct or want of caution	125	42	113	67
Trespassers and other persons, neither passengers nor servants, killed and injured by improperly crossing or standing on the railway .	41	10	48	11
One person run over and killed at a crossing through misconduct of an engine-driver	1	..	..	..
A child killed, and another injured, in consequence of an engine getting off the rails and running into an adjoining house . . . . .	..	..	1	1
Suicide.	1	..	3	..
Total	202	219	202	187
	Year ending 31st Dec., 1848.		Year ending 31st Dec., 1849.	
Number of passengers conveyed during the same periods	57,960,784		63,841,539	

Office of Commissioners of Railways, Whitehall.

DUNCAN MACGREGOR, Registrar.

APPENDIX

COMPARATIVE STATEMENT of the TRAFFIC on all the RAILWAYS in the

	Length open on 30th June in each Year.	NUMBER OF PASSENGERS.						1st Class.
		1st Class.	2nd-Class.	3rd Class.	Parliamentary Class.	Mixed.	Total Passengers.	
Year ending—	Miles.							£. s. d.
30th June, 1845 .	2,343	5,474,163	14,325,825	13,135,820	..	855,445	33,791,253	1,516,805 0 0
„ 1846 .	2,765	6,160,354	16,931,066	14,559,515	3,946,922	2,193,126	42,790,983	1,661,897 19 10½
„ 1847 .	3,603	6,572,714	18,699,288	15,865,311	6,985,493	3,229,357	51,352,163	1,675,759 6 9
„ 1848 .	4,478	7,190,779	21,690,509	15,241,529	13,092,489	749,764	57,965,070	1,792,533 3 8
„ 1849 .	5,447	7,078,690	23,392,450	14,378,377	15,432,457	116,185	60,398,159	1,889,645 17 6½

STATEMENT showing the NUMBER and DESCRIPTION of PERSONS EMPLOYED on all on the 1st of May 1848,

On the 1st MAY 1848.									
	Secretaries and Managers.	Treasurers.	Engineers.	Superintendents.	Store-keepers.	Accountants and Cashiers.	Inspectors and Time-keepers.	Station Masters.	Draughtsmen.
Total Number of Persons employed upon Railways open for traffic on 1st May 1848	111	29	95	343	125	118	..	..	106
Total Number of Persons employed upon Railways not open for traffic on 1st May 1848	195	21	405	1,897	243	233	119	..	306
Total Number of Persons employed on all Railways (open and unopen) on the 1st May 1848	306	50	500	2,240	368	351	119	..	412
On the 30th JUNE 1849. :									
Total Number of Persons employed upon Railways open for traffic on the 30th June 1849	156	32	107	314	120	138	490	1,300	103
Total Number of Persons employed upon Railways not open for traffic on the 30th June 1849	142	7	269	419	182	144	821	..	153
Total Number and description of Persons employed on all Railways (open and unopen), authorized to be used for the conveyance of passengers .	298	39	376	733	302	282	1,311	1,300	256
1848.						Persons Employed.			
Total length of Railway open on 1st May 1848, and Persons employed thereon .						Miles.	Chains.	52,638	
Total length of Railway in course of construction on 1st May 1848, and Persons employed thereon						2,958	4½	188,177	
Total . . . . .						..	..	240,865	

Office of Commissioners of Railways, Whitehall.

No. 82.

UNITED KINGDOM, for the Five Years ending 30th June, 1845-6-7-8-9.

RECEIPTS FROM PASSENGERS.					Receipts from Goods, Cattle, Parcels, Mails, &c.	Total Receipts.
2nd Class.	3rd Class.	Parliamentary Class.	Mixed.	Total from Passengers.		
£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.
1,598,115 0 0	651,903 0 0	. . .	209,518 0 0	3,976,341 0 0	2,233,373 0 0	6,209,714 0 0
1,937,946 19 11	738,474 4 11	293,732 7 0	93,164 0 0	4,725,215 11 8½	2,840,353 16 6½	7,565,569 8 2½
2,048,080 6 11½	737,452 5 4	539,976 16 11	146,733 9 1	5,148,002 5 0½	3,362,893 19 6½	8,510,886 4 7½
2,352,152 11 5½	661,038 7 5½	902,851 1 8½	11,807 4 10	5,720,382 9 1½	4,213,169 14 5½	9,933,552 3 7½
2,502,587 15 11½	651,365 18 10	1,059,785 10 7½	2,590 4 8	6,105,975 7 7½	5,094,925 18 11	11,200,901 6 6½

the RAILWAYS in the UNITED KINGDOM, whether Open or in course of Construction, and on the 30th June 1849.

On the 1st MAY 1848.													
Clerks.	Foremen.	Engine Drivers.	Assistant Engine Drivers and Firemen.	Guards and Breaksmen.	Switchmen.	Gate-keepers.	Policemen and Watchmen.	Porters and Messengers.	Plate-layers.	Artificers.	Labourers.	Miscellaneous Employment.	Total.
4,360	1,011	1,752	1,809	1,496	1,058	401	2,475	7,559	4,391	10,814	14,438	197	52,688
887	685	..	..	..	..	..	71	10	256	29,087	153,620	142	188,177
5,247	1,696	1,752	1,809	1,496	1,058	401	2,546	7,569	4,647	39,901	168,058	339	240,865

On the 30th June 1849.													
4,021	709	1,839	1,871	1,631	1,540	1,361	1,508	8,238	5,508	10,809	14,029	144	55,968
421	1,421	..	..	..	..	..	481	118	..	16,144	83,052	42	103,816
4,442	2,130	1,839	1,871	1,631	1,540	1,361	1,989	8,356	5,508	26,953	97,081	186	159,784

1849.			
Total length of Railway open on 30th June 1849, and Persons employed thereon		Miles.	Persons Employed.
		5,447	55,968
Total length of Railway in course of construction on 30th June 1849, and Persons employed thereon		Chains.	
		20½	103,816
Total		..	159,784

DUNCAN MACGREGOR, Registrar.

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For Her Majesty's Stationery Office.

RAILWAY TOLLS.

REPORT in compliance with an Order of the Honourable The House of Commons,
dated 19 February 1850;—

“ THAT the COMMISSIONERS of RAILWAYS be directed to report their Opinion to this House, in accordance with the Provisions of the Act 9 & 10 Vict. c. 105, on any RAILWAY BILLS, which have been introduced during the present Session, in which it is proposed to raise or alter the RATES and TOLLS authorized to be taken under existing Acts of Parliament.”

THE following Bills appear to the Commissioners of Railways to be comprised under this Order:—

1. ABERDEEN RAILWAY (Amendment of Acts, Increase of Capital, Alterations of Station and of Line and Levels of other Works, Alteration of Line and Levels of Part of the Great North of Scotland Railway, Repeal of Act amalgamating the Aberdeen and Great North of Scotland Railway Companies, and other Purposes).
 2. SOUTH YORKSHIRE, DONCASTER AND GOOLE RAILWAY (Amendment of Acts, Deviation at Doncaster; Alteration of Tolls; Power to borrow on Companies' Tolls, and on those of the River Dun and Dearne and Dove Canal).
 3. SOUTH YORKSHIRE, DONCASTER AND GOOLE RAILWAY (Amendment of Acts, Deviation to Worsborough and Barnsley and at Wombwell, Extension of Elsecar Branch to Tankersley, and Alteration of Tolls).
 4. SOUTH WALES RAILWAY (No. 2.) (Repeal and Alteration of Powers as to Forest of Dean Railway and Works, and as to Tolls thereon, &c.; Construction of New Railway in the Forest of Dean; Deviation of Line; crossing of Public Roads; Arrangements with Vale of Neath Railway Company as to Use of Station, &c.; Powers to secure Advantages on the Re-issue of forfeited and on un-issued Shares; Purchase of Land for Wharves in Chepstow; and Amendment of Acts).
 5. LANCASHIRE and YORKSHIRE RAILWAY (Alteration of, and further Powers for levying Tolls, Regulations as to Poor and other Rates, and Amendment of Acts).
 6. LIVERPOOL, CORSBY AND SOUTHPORT RAILWAY (Deviations, Enlargement of Station, Extension of Time for Purchase of Lands and Completion of Works, Reduction of Tolls payable in respect of the Use of Part of the Lancashire and Yorkshire Railway (late the Liverpool and Bury Railway), and Amendment of Acts).
 7. GREAT NORTHERN RAILWAY DEVIATIONS (Amendment of Acts, Alteration of Tolls, and of East Lincolnshire Railway Tolls).
-

ON receiving the Order, the Commissioners of Railways directed communications to be made, requesting statements to be forwarded to them on behalf of the Promoters of these Bills, of the grounds on which it was proposed to alter the tolls authorized by existing Acts of Parliament, accompanied by an account of the manner in which the capital authorized to be raised by the Company has been expended; an account of the traffic, and of the receipts therefrom, during each of the last six months; an account of the expenses of working that traffic, together with a statement of any rent-charges or preferential payments secured upon the profits of the Company; and a complete list of the charges exacted by the Company for the different classes of passengers and goods between different places, &c. The Commissioners also informed those parties whom they understood to be opposed to the proposed alteration of tolls, that they were ready to receive and consider any statements on the subject which they might wish to offer.

Sufficient time having now elapsed since these communications were sent to admit of the preparation of statements, by any parties desirous to have their objections considered, and having carefully considered those which have been laid before them, the Commissioners of Railways deem it right to make their report without any further delay.

1. ABERDEEN RAILWAY (Amendment of Acts, Increase of Capital, Alterations of Station and of Line and Levels of other Works, Alteration of Line and Levels of Part of the Great North of Scotland Railway, Repeal of Act amalgamating the Aberdeen and Great North of Scotland Railway Companies, and other Purposes).

Thirteen days after receiving the Order of the House, the Commissioners were informed by the Promoters of this Bill, that the toll clauses would be withdrawn, to avoid the delay which their retention would cause to the progress of the Bill. Under these circumstances, the Commissioners ceased to consider it as one of the Bills referred to them.

2. SOUTH YORKSHIRE, DONCASTER AND GOOLE RAILWAY (Amendment of Acts; Deviation at Doncaster; Alteration of Tolls; Power to borrow on Companies' Tolls, and on those of the River Dun and Dearne and Dove Canal).

3. SOUTH YORKSHIRE, DONCASTER AND GOOLE RAILWAY (Amendment of Acts, Deviation to Worsborough and Barnsley and at Wombwell, Extension of Elsecar Branch to Tankersley, and Alteration of Tolls).

By clauses introduced into each of these Bills, the South Yorkshire, Doncaster and Goole Railway Company seek power to raise their tolls, which are at present limited by their Act of Incorporation, passed in 1847, and are shown in the following table, which also gives the rates as now proposed to be altered :—

SOUTH YORKSHIRE, DONCASTER AND GOOLE RAILWAY, 10 & 11 Vict. c. 291.

	Toll for the Use of the Line.	Toll and Charges for Conveyance, including Use of Line, Power, &c.
UNDER EXISTING ACT:		
<i>Dung, compost, and all sorts of manure, lime and limestone, and salt, and all undressed materials, for the repair of public roads or highways, or stones for building, pitching and paving, and for all coal, coke, culm, charcoal and cinders, clay, sand, iron stone and iron ore, per ton per mile</i>	$\frac{1}{2}$ d.	1 d.
BY THE BILL:		
Lime, limestone, and salt, coal, clay, sand, iron-stone and iron ore, per ton per mile	$\frac{1}{2}$ d.	1 d.
Dung, compost, and all sorts of manure, and all undressed materials	1 d. Increase 100 p' ct.	$1\frac{1}{2}$ d. Increase 25 p' ct.
For the repair of public roads, slack, cannel, coke, culm, charcoal and cinders, per ton per mile	1 d. Increase 100 p' ct.	$\frac{3}{4}$ d. Decrease 25 p' ct.
Stones for building, pitching and paving, per ton per mile	$1\frac{1}{2}$ d. Increase 200 p' ct.	$1\frac{1}{2}$ d. Increase 75 p' ct.

UNDER

	Toll for the Use of the Line.	Toll and Charges for Conveyance, including Use of Line, Power, &c.
UNDER EXISTING ACT :		
<i>Bricks, tiles, slates, pig iron, bar iron, rod iron, hoop iron, sheet iron, and all other similar descriptions of wrought iron, and iron castings, not manufactured into utensils or other articles of merchandize, per ton per mile</i> - - -	1 d.	1½ d.
BY THE BILL, the whole of the above - - -	1½ d. Increase 50 p' ct.	1½ d. Increase 16½ p' ct.
<hr/>		
UNDER EXISTING ACT :		
<i>Sugar, grain, corn, flour, hides, dyewoods, earthenware, timber, staves and deals, metals, except iron, nails, anvils, vices and chains, all cotton and other wools, drugs, manufactured goods, and all other wares, merchandize, articles, matters or things, per ton per mile</i> - - -	2 d.	3 d.
BY THE BILL :		
<i>Sugar, grain, corn, flour, hides, dyewoods, earthenware, timber, staves and deals, metals, except iron, nails, anvils, vices and chains, per ton per mile</i> - - -	2 d.	3 d.
<i>Cotton and other wools, drugs, manufactured goods, and all other wares, merchandize, articles, matters or things, per ton per mile</i> - -	3 d. Increase 50 p' ct.	3 d.
<hr/>		
UNDER EXISTING ACT :		
<i>Fish and poultry, per ton per mile</i> - - -	- - -	6 d.
BY THE BILL - - - - -	- - -	4 d. Decrease 33 p' ct.
<hr/>		
UNDER EXISTING ACT :		
<i>For every carriage, of whatever description, not being a carriage adapted and used for travelling on a Railway, and not weighing more than one ton, carried or conveyed on a truck or platform, per mile</i> - - -	5 d.	7 d.
BY THE BILL, the above - - - - -	4 d. Decrease 20 p' ct.	4 d. Decrease 43 p' ct. 5 d. if 1½ ton.
<hr/>		
UNDER EXISTING ACT :		
<i>And for every additional quarter of a ton, or fractional part of a quarter of a ton, which any such carriage may weigh, per mile</i> - - -	1 d.	
BY THE BILL - - - - -	4 d. Increase 300 p' ct.	
<hr/>		

	Toll for the Use of the Line.	Toll and Charges for Conveyance, including Use of Line, Power, &c.
PASSENGERS :		
UNDER EXISTING ACT :		
<i>For every person conveyed in a carriage upon the Railway, per mile</i> - - - - -	2 d.	2 d.
1st Class - - - - -	- - -	1½ d.
2d Class - - - - -	- - -	1 d.
3d Class - - - - -	- - -	
BY THE BILL :		
<i>For every passenger conveyed in or by any express train, or in a first-class carriage by any other train, per mile</i> - - - - -	2 d.	<div>6 d. for every fraction of 6 d. beyond an integral number.</div> <div>3 d. Increase 50 p' ct. 2 d. Increase 25 p' ct.</div>
<i>For every passenger conveyed in a second-class carriage by any such other train, per mile</i> -	1½ d. Decrease 25 p' ct.	
<i>For every passenger conveyed in a third-class carriage by any such other train, per mile</i> -	1 d. Decrease 50 p' ct.	
<hr/>		
UNDER EXISTING ACT :		
<i>For every horse, per mile</i> - - - - -	3 d.	4 d.
BY THE BILL - - - - -	2 d. Decrease 50 p' ct.	5 d. Increase 25 p' ct.
<hr/>		
UNDER EXISTING ACT :		
<i>For every mule or other beast of draught or burden, and for every ox, cow, bull or neat cattle, conveyed in or upon any carriage, per mile</i> - -	1 d.	1 d.
BY THE BILL :		
<i>Mule or other beast of draught or burden, per mile</i> - - - - -	2 d. Increase 100 p' ct.	5 d. Increase 400 p' ct.
<i>Ox, cow, bull or neat cattle, per mile</i> - -	1½ d. Increase 50 p' ct.	2 d. Increase 100 p' ct.
<hr/>		
UNDER EXISTING ACT :		
<i>For every calf, pig, sheep, lamb, or other small animal, conveyed in or upon any carriage, per mile</i> - - - - -	½ d.	½ d.
BY THE BILL :		
<i>For every calf or pig, per mile</i> - - - - -	½ d. Increase 100 p' ct.	1 d. Increase 300 p' ct.
<i>For every sheep, or other small animal, per mile</i>	½ d. Increase 100 p' ct.	¾ d. Increase 200 p' ct.
<hr/>		
UNDER EXISTING ACT :		
<i>For the carriage of any one boiler, cylinder, or single piece of machinery, or single piece of timber or stone, or other single article, the weight of which, including the carriage, shall exceed four tons, but shall not exceed six tons, per ton per mile</i> - - - - -	6 d.	6 d.
<i>Exceeding eight tons, such sum as the Company may think fit.</i>		
BY THE BILL :		
<i>For the same, exceeding four, and not exceeding eight tons, per ton per mile</i> - - - - -	8 d. Increase 25 p' ct.	

UNDER

	Toll for the Use of the Line.	Toll and Charges for Conveyance, including use of Line, Power, &c.
<p>UNDER EXISTING ACT: For articles or persons conveyed on the Railways for a less distance than six miles, the Company may demand tolls and charges as for six miles. This Clause is not affected by the Bill.</p> <hr/> <p>UNDER EXISTING ACT: For a fraction of a mile, the Company may demand tolls in proportion to the number of quarters of a mile contained therein; and if there be a fraction of a quarter of a mile, such fraction shall be deemed a quarter of a mile. In addition to this the Bill provides, "and in respect of passengers, for every fraction of a mile, the Company may charge as for a mile."</p> <hr/> <p>The following Clauses are not provided in the existing Acts:—</p> <p>BY THE BILL: The Company shall be at liberty to fix a minimum charge of Ten shillings to be taken for each Carriage, and of Five shillings for every Horse conveyed upon their Railways, notwithstanding the charge for the distance for which such carriage or horses respectively may be conveyed, according to the rates aforesaid, may not amount to those sums.</p> <p>BY THE BILL: Where a waggon for the carriage of cattle or sheep shall be conveyed by the Company for one party, the charge for any such waggon capable of containing six oxen or twenty-five sheep shall not exceed per mile - -</p> <p>BY THE BILL: The Company are authorized to charge for the use of any hoist or bridge or other important work.</p>	<p>- - -</p>	<p>9 d.</p>

The grounds on which the South Yorkshire Railway Company found their application to the Legislature are, "the generally acknowledged facts, that the calculation of Railway profits adopted at the time of the passing of their Act were erroneous," and that the Manchester, Sheffield and Lincolnshire Railway Company, who are the proprietors of lines adjoining those of the South Yorkshire Railway Company, were allowed by an Act of last Session to increase their tolls to the scale proposed in this Bill.

With the exception of about five miles employed for coal traffic, the only part of the lines, which this Company has been authorized to construct, at present open for traffic, is the Railway between Swinton and Doncaster, about eight miles in length. This line has only been opened about five months, during which period it has been worked by the Midland Railway Company, who state that they have entered into an arrangement with the South Yorkshire, Doncaster and Goole Railway Company for working it for a period of seven years, upon the basis of a percentage division of the receipts, calculated upon the maximum charges allowed by the existing Acts; the Midland Company receiving only 25 per cent., whilst the South Yorkshire Company receive the remaining 75 per cent.

The Midland Company object to the proposed alteration, and urge that the South Yorkshire Railway Company, as the owners of the whole of the navigation between Sheffield and the port of Goole, have a greater interest in securing the traffic of Sheffield for that route than for the Railway.

Considering that the South Yorkshire Railway Company can hardly be said to have tried the sufficiency of the scale of charges on which they accepted their Act of Incorporation; considering also that they are the proprietors of a great extent of navigation necessarily competing with the Railway routes of the district, and that as a Railway Company they do not possess any important main line of communication, but only portions of Railway, forming communications between other lines,—the Commissioners are of opinion that no sufficient reason has been shown for the alterations of tolls proposed by the Bill, and that it might be prejudicial to the interests of the public to allow this Company to increase their Railway charges.

4. SOUTH WALES RAILWAY (No. 2.) (Repeal and Alteration of Powers as to Forest of Dean Railway and Works and as to Tolls thereon, &c.; Construction of new Railway in the Forest of Dean; Deviation of Line; crossing of Public Roads; Arrangements with Vale of Neath Railway Company as to Use of Station, &c.; Powers to secure Advantages on the Re-issue of forfeited and on un-issued Shares; Purchase of Land for Wharves in Chepstow, and Amendment of Acts.)

The South Wales Railway Company obtained an Act in 1847, by which, among the various powers given to the Company, they were authorized to rent or purchase the Forest of Dean Railway, to alter and improve that line, constructing certain Railways in lieu of certain portions thereof, and adopting a gauge of seven feet, to admit of their being worked continuously with the South Wales Railway. This Act limited the charges for the conveyance of goods by the South Wales or Forest of Dean Companies upon the Forest of Dean Railway and its Branches, or upon the Railways authorized to be constructed in lieu of portions thereof, including the use of certain wharves at Bullo Pill, the shipping place of the district (but excepting a reasonable charge for loading and unloading), to 2½*d.* per ton per mile; and it also provided that any Company in whom the Forest of Dean Railway and Branches, or the lines to be constructed, shall be vested, shall find locomotive power when required, as soon as a sufficient load shall be in readiness for conveyance upon the Railways.

It is to be observed that this Act does not limit the charges for the use of the line, nor for a partial performance of the conveyance of goods, as by the provision of locomotive power only; and the tolls authorized by the Act of 1826, relating to the Forest of Dean Railway, and which the South Wales Railway Company are empowered to levy after completing the purchase of the line, are very exorbitant.

By the present Bill it is proposed to authorize a charge for the conveyance of goods on the lines above mentioned, or those which it is now proposed to substitute for them, of 3*d.* per ton per mile, being one halfpenny more than the maximum authorized by the Act of 1847, and also to sanction a limited charge for the use of the wharves at Bullo Pill, for which no charge can at present be exacted; to permit increased charges for short distances, varying under certain circumstances described in the clause, and jointly for fractions of a quarter of a mile, and for fractions of a hundred-weight.

Under the proposed provision of the Bill, the Company in whom these lines might be vested could not be compelled to find locomotive power when required; but when it is applied, the charge to be made for such power is limited, and also the charge for waggons or trucks, and for the use of the line when the Company are not the carriers.

The alterations to be effected by the Toll Clauses in the Bill have been objected to in a Petition to the House of Commons by the Gloucester and Dean Forest Railway Company; and objections have also been urged against them in a Memorial forwarded to the Commissioners by the proprietors of certain collieries in the Forest of Dean. It appears, however, by statements received from the Promoters of the Bill, and from the Gloucester and Dean Forest Railway Company, and also from the Memorial above mentioned, that negotiations have been entered into by the

the parties interested, and that a meeting having been held on the 15th February, the following articles were agreed to :—

That the Section 34 of the Act of 1847 be inserted in the present Bill, with the alteration of 3*d.* per ton per mile as the maximum, instead of 2½*d.*

That the Section 35 of the same Act be inserted in the present Bill, with the addition of the words “and trucks” after the word “power”.

That the Wharfage Clause 22 of the present Bill stand, with the alteration that the 2*d.* per ton for two months shall be altered to three months; and after three months the addition of a 1*d.* per ton per month for coal, &c. remaining on the wharfs.

That the maximum charge, including tolls, power, and trucks, and wharfage, shall not exceed 3*d.* per ton per mile in the distance carried, subject to the Five-mile Clause.

Nothing of the above applying to the coal, &c. carried within the Forest. The South Wales Company not to be bound to find locomotive power and trucks for intermediate traffic not conveyed within two miles of Bullo Pill, within the Forest; and upon such traffic the charges for tolls shall be 2*d.* per ton; power, if and when provided, 1*d.*; trucks, if and when provided, ½*d.*; maximum, 3*d.*; minimum, one mile.

That the conversion of the Bullo Pill Line shall be completed before the 31st day of December 1852.

Clauses to be inserted to keep the tramway in good working repair until the opening of the new Railway.

That the freighters at present pay 1½*d.* per ton per mile, machine weight of 2,400 lbs. of coal, upon all coal, &c., from the 1st January 1849 to the 31st December 1852, including all charges for wharfage, and all other charges one penny per mile, part thereof, to be paid as in past times, and the five-eighths to be deposited in the hands of Messrs. Glyn, in the names of parties to be agreed upon, upon trust to be paid over to the South Wales Company, if the line be completed the 31st December 1852, and if not then complete, to be paid back to the parties depositing.

The money already paid to the Forest of Dean Railway Company to be reckoned in part of the 1*d.* per ton agreed to be paid.

That all proper costs of the parties of this arrangement to carry the same into effect, be paid by the South Wales Railway Company.

Additional Memoranda :—

That if the foregoing agreement be carried into effect, the freighters pay to the Forest of Dean Railway Company the toll agreed of 1½*d.*, as before-mentioned, from 1 January 1849 to 27 July last, less payments already made, notwithstanding anything to the contrary hereinbefore contained.

It appears to the Commissioners, that if the Bill be so altered as to secure the observance of these articles, no objections would exist to the proposed alterations of tolls.

5. LANCASHIRE AND YORKSHIRE RAILWAY (Alteration of, and further Powers for levying Tolls, Regulations as to Poor and other Rates, and Amendment of Acts).

The Lancashire and Yorkshire Railway Company, originally incorporated by an Act passed in 1836 as the Manchester and Leeds Railway Company, in that Act obtained powers to charge tolls at the following rates :—

Passenger Traffic :

First Class	} - - - - -	per mile, 3½ <i>d.</i>
Second Class		
Third Class		

Goods Traffic, per ton per mile :

Coal, coke, cannel, culm and cinders	2½ <i>d.</i>	} - - For toll and power only; an unlimited charge for carriages.
Manure, lime, limestone, road materials, charcoal, stones for buildings, bricks, tiles, slate, clay, sand, iron-stone and iron ore	3 <i>d.</i>	

Goods Traffic, per ton per mile—*continued*.

Iron, not damageable	- - - - -	2½ d.
Iron, damageable, sheet, hoop and other similar descriptions of wrought iron	- - - - -	2½ d.
Sugar, hides, dye-woods, Manchester packs, earthenware, timber, staves, deals, metals, hardware in packages or cases, nails, anvils, vices and chains	- - - - -	2½ d.
Corn and other grain, malt and flour	- - - - -	2½ d.
Cotton and other wools and manufactured goods	- - - - -	3 d.
Fish, feathers, canes, cochineal, furniture, hats, shoes, toys, and all other articles, matters and things	- - - - -	3 d.

- - For toll only; the charge for locomotives and carriages unlimited.

These tolls, which did not include charges for carriages (except in the case of passengers), and for many articles of merchandize imposed no limit to the charge for power and carriages, were extended to various branches, by subsequent Acts, with some modifications (in the case of one branch the Company were empowered to levy tolls double of those upon the main line), until, in 1846, the Company, then seeking powers to construct additional branches and lines, as an inducement to Parliament to grant their schemes, in preference to other opposition schemes, at that time also under the consideration of the House, accepted an amended tariff, set forth in "The West Riding Union Railways Act, 1846," which, according to that Act, was to be applicable to the Manchester and Leeds Railway Company, upon its amalgamation with the West Riding Union Railway Company. This latter Company was by the same Act declared to be incorporated with the Manchester and Leeds Railway Company from and after the expiration of three months after the passing of the Act, which received the Royal Assent on the 18th of August 1846. This reduced tariff, therefore, came into full operation before the year 1847, being the same as that which was enforced in the case of the amalgamation of the London and Birmingham, Grand Junction, and Liverpool and Manchester Railway Companies, and now in operation on those lines.

The following is an abstract of the maximum charges as then established, and of the additions sought by the present Bill :—

	T O L L S for the Use of the Railway.		MAXIMUM CHARGES.	
	By existing Tariff.	By Tariff proposed by Bill.	By existing Tariff.	By Tariff proposed in Bill.
	Per mile.	d.	d.	d.
Passenger conveyed by express train - - - -	2	2½	2½	3
First-class passenger by any other train - - - -	1½	1½	2	2½
Second-class passenger by any other train - - - -	1	1½	1½	1½
Third-class passenger by any other train - - - -	½	½	1	1½ excepting Parliamentary trains.
Horse or beast of burden - - - - each	2	2½	3	3½
Cattle - - - - per head	1	1½	2	2½
Calves and pigs - - - - per head	½	½	1	1½
Sheep and small animals - - - - each	½	½	½	½
Every carriage not weighing more than one ton,—and -	3	3½	4	4½
For every additional quarter of a ton - - - -	3	3½	—	—
For all dung, compost, manure, lime, limestone, undressed materials for repair of roads, charcoal, stone for buildings, pitching and paving, bricks, tiles, slates, clay, sand, iron-stone and iron ore - - - per ton	1	1½	1½ not exceeding 50 miles. 1½ exceeding 50 miles.	1½ 1½
For pig and bar iron - - - - per ton	1	1½	1½ not exceeding 50 miles. 1 exceeding 50 miles.	1½ 1½

	T O L L S for the Use of the Railway.		MAXIMUM CHARGES.	
	By existing Tariff.	By Tariff proposed by Bill.	By existing Tariff.	By Tariff proposed in Bill.
	Per mile.	d.	d.	d.
For coal, cannel, culm, coke and cinders - - per ton	$\frac{2}{4}$ not exceeding 50 miles.	$\frac{9}{10}$	$1\frac{1}{8}$ not exceeding 50 miles.	$1\frac{7}{10}$
	$\frac{5}{8}$ exceeding 50 miles.	$\frac{3}{4}$	$\frac{7}{8}$ exceeding 50 miles.	$1\frac{1}{10}$
For slack - - - - - per ton	same	same	1 not exceeding 50 miles.	$1\frac{1}{2}$
			$\frac{7}{8}$ exceeding 50 miles.	$1\frac{1}{10}$
For sheet-iron, hoop-iron and all similar descriptions of wrought iron - - - - - per ton	$1\frac{1}{2}$	$1\frac{1}{2}$	2 not exceeding 50 miles.	$2\frac{2}{3}$
			$1\frac{1}{2}$ exceeding 50 miles.	$1\frac{1}{2}$
For sugar, hides, dye-woods, Manchester packs, earthen- ware, staves, deals, metals, hardware in packages or cases, nails, anvils, vices, and chains - - - per ton	2	$2\frac{2}{3}$	$2\frac{1}{2}$ not exceeding 50 miles.	3
			2 exceeding 50 miles.	$2\frac{2}{3}$
For corn and other grain, malt and flour - - - -	2	$2\frac{2}{3}$	2	3
For cotton and other wools, drugs and manufactured goods - - - - - per ton	$2\frac{1}{2}$	$2\frac{2}{3}$	3 not exceeding 50 miles.	$3\frac{2}{3}$
			$2\frac{1}{2}$ exceeding 50 miles.	3
For fish, feathers, canes, cochineal, furniture, hats, shoes, toys and all other articles, matters and things - per ton	3	$3\frac{2}{3}$	$3\frac{1}{2}$ not exceeding 50 miles.	$4\frac{1}{2}$
			3 exceeding 50 miles.	$3\frac{2}{3}$

By their existing tariff, the Company are empowered to demand and receive for any of the articles, persons or things conveyed for a less distance than six miles, rates or tolls for six miles, also to fix a minimum charge of * ten shillings to be taken for each carriage, and of * five shillings for each horse. For every fraction of a mile beyond six miles or any greater number of miles, the Company may demand for such fraction in proportion to the number of quarters of a mile contained therein; and if there be a fraction of a quarter of a mile, such fraction shall be deemed a quarter of a mile; and in the same manner as regards fractions of a ton for parcels under five hundred-weight, the Company may demand any sum they think fit. For any boiler, cylinder or single piece of machinery or other article, the weight of which shall exceed four tons, but not exceed eight tons, the Company may demand any sum not exceeding † 8 d. per ton per mile, and for any article exceeding 8 tons, such sum as they think fit.

By the Bill,—The Company seek to obtain powers to demand, in addition to the tolls, &c., set forth in the foregoing table, the following terminal charges:—

For every passenger conveyed in an express train, or in a first-class carriage in any other train, the sum of 6 d.

For every passenger conveyed in a second-class carriage by any such other train, 4 d.

For every passenger conveyed in a third-class carriage by any such other train (except Parliamentary trains), 2 d.

The Company also seek powers to demand from first-class passengers for the fractional part of 6 d. in any sum beyond an integral number of sixpences, the sum of 6 d.; and in the same manner with regard to second and third class passengers, with any fractional part of 4 d. and 2 d., and with respect to passengers conveyed in any third-class carriage by Parliamentary trains, with fractions of 1 d.

The Company also seek powers to demand for each passenger conveyed over or upon the inclined planes of the Clifton Branch, and of a Branch Railway connecting the Lancashire and Yorkshire Railway with the Wardley Branch of the

* These charges by the Bill would become 12 s. and 6 s.

† This charge by the Bill would become 9 $\frac{2}{3}$ d.

the Manchester and Southport Railway, an additional sum of 3*d.*, and for each ton of minerals or goods 6*d.*, in addition to the tolls and rates before enumerated.

From the above, it appears that the increase sought to the present rates and tolls is 20 per cent., except in the case of corn, the increase upon which is 50 per cent., and in the case of passengers, upon whose fares, according to this proposed tariff, it is difficult to state the increase indirectly to be obtained in addition to the 20 per cent. By the present tariff, fractions of miles are charged according to the number of quarters of a mile included in the fraction; but it is presumed that in many cases this may infringe upon an integral 6*d.*, and therefore, according to this Bill, render a first-class passenger liable to an additional charge of 6*d.*; the same with a second or third class passenger in the smaller sum of 4*d.* or 2*d.*; in addition to which, however short the distance travelled, and however convenient or otherwise the station may be, whether terminal or not, the Company seek to add to every fare so computed the sum of 6*d.*, 4*d.* or 2*d.* as a terminal charge.

The following Memorials or statements have been received in opposition to this proposed increased tariff:—

1. From Landowners, Merchants, Manufacturers, &c., on the Lancashire and Yorkshire Railway, who state that great opposition was raised in 1846 to the monopoly of traffic which the Manchester and Leeds Railway Company was endeavouring then to acquire, and that a scale of maximum charges was then fixed by a special clause, to which all lines amalgamating with the Manchester and Leeds Company were to become subject; that the present Bill would render nugatory the above-mentioned clause; that in every instance when it has been possible, the Company have crushed competition, and that in many cases they have demanded more than the maximum charges allowed by their Act; that the public ought not to be taxed, because the Company have entered into improvident guarantees and constructed unprofitable branches.
2. From the East Lancashire Railway Company, stating that the proposed increase of tolls would be a breach of agreements entered into between the proprietors of companies originally incorporated, who now form part of the Lancashire and Yorkshire and of the East Lancashire Railway Companies.
3. From the Mayor and Corporation of Halifax, stating that their trade will suffer if they do not have equal facilities with other towns, and that they have already suffered from the Lancashire and Yorkshire Company having monopolized the Canal traffic, as well as the Railway traffic of the district.
4. From Coal-owners, &c., stating that the Lancashire and Yorkshire Company possess to a considerable extent a monopoly of the mineral and particularly the coal traffic of Lancashire; that the tolls should therefore be regulated by legislative enactments; that the present tolls would afford adequate remuneration on the legitimate outlay of the Company; but in order to compete with the Bridgewater Trust, and other Railway Companies, they have reduced their charges on parts of their line below what can possibly pay them, and have guaranteed to other Companies dividends to an amount much exceeding the annual value of the property acquired; that by refusing to make an agreement with the East Lancashire Railway, they have rejected a large and profitable traffic; that they have created a preferential stock at a high rate of interest, instead of calling up the legitimate capital of the Company, to relieve proprietors from paying money actually due upon the shares, which would have then participated in the ordinary dividend of the Company; that they have incurred a loss on 21 miles of traffic by attempting to compete between Preston and Liverpool with the more direct route of the East Lancashire Railway; that the public should not suffer for the mismanagement of the Company; that the terminal charge for passengers is unprecedented, and cannot be justified on any principle.
5. From Mr. J. F. Fletcher, manager of collieries at Clifton, stating, that the present charges for coal are remunerative to the Company, and as high as those upon other lines in the district, and that if increased, it will be impossible for him to work his collieries advantageously.

6. From

6. From the Liverpool, Crosby and Southport Railway Company, who run over three miles of the Lancashire and Yorkshire Railway before reaching Liverpool; they state, that a large portion of the traffic is subject to competition from omnibuses, and that if the maximum rates of the Lancashire and Yorkshire Company are raised, it will put them entirely at the mercy of that Company.
7. Two Memorials from the Merchants, Manufacturers and Traders in the town and neighbourhood of Huddersfield, stating, that the proposed tolls would be an increase on their several lines for corn, grain, malt and flour of from 100 to 50 per cent., on other goods of 20 per cent., and on passengers of 50 per cent.; that Huddersfield is dependent upon cheap and expeditious means of conveyance for obtaining its food and its raw material, and also for the disposal of its manufactures; that the present tolls have been fixed with a due regard to the wants of the district, and that the present passenger fares correspond with the omnibus fares; that the extent of the lines of the Lancashire and Yorkshire Railway Company enable them to charge temporarily ruinously low rates to crush competition in particular parts, while they exact the maximum in other portions of their line; that at present the Lancashire and Yorkshire Railway Company's fares are identical with those of the London and North-Western Railway Company.
8. From the Mayor and Corporation of Bolton, stating, that the Manchester and Bolton Railway (now part of the Lancashire and Yorkshire) realizes a clear profit of 15 per cent. upon the cost of the line, and that it is unfair that the inhabitants of Bolton should suffer for imprudent outlays by the Company on other lines of Railway; that the proposed increase would be a breach of the agreement made between the bleachers and the Manchester and Bolton Company, on the faith of which the bleachers disposed of their carrying plant, and extended their works; and if the tolls are raised, they will be unable to compete with other bleachers; that there appears to be no reason for charging a higher price for manufactured goods packed in boxes than for corn and flour; that the cotton-spinner and iron-works will suffer by the proposed increase.
9. From the Mayor and Corporation of Oldham, stating that the traffic between Oldham and Manchester affords an ample remunerative return on the expenditure incurred in making that portion of the Railway; that the traffic is increasing; that the profits of the Company are said to have fallen off, from their making and leasing lines which are not remunerative, but that the public ought not to suffer from the Company's improvidence.

From the statement submitted by the Railway Company for the consideration of the Commissioners, it appears that in 1847, which was the first entire year throughout which the existing tariff was in operation, the productive capital of the Company was 3,699,763*l.*, and the gross revenue was 356,933*l.*, which, after deducting all expenses, 142,756*l.*, left a net revenue of 214,175*l.*, being at the rate of 5·78 per cent. profit upon the expended capital; the length of line opened for public traffic at this time being 64½ miles.

At the end of 1849, the productive capital of the Company appears to have been 8,179,509*l.*, being an increase of 121 per cent. upon that of 1847, the mileage of Railway open being 157½ miles, exclusive of 23½ opened in October and December 1849, being an increase of 144 per cent., while the gross revenue had become 545,174*l.*, being an increase of 52 per cent. The working expenses had in the mean time increased to 266,372*l.*, or by 86 per cent., and the net revenue had become 279,332*l.*, having therefore only increased 30 per cent.; and it now, therefore, yields, at the rate of last year, only 3·41 per cent. profit upon the productive capital of the Company. Considering that the Company have, in the statement of their reasons for this application for an increased tariff, set forth, that the diminution of the dividend is not consequent on a diminution of traffic, and have further shown that the expense of conducting their traffic has decreased, in the case of passengers, from 9·13*d.* per passenger to 7·58, or 21 per cent., and in that of goods from 2*s.* 8½*d.* per ton to 2*s.* 7½*d.* per ton, or 2 per cent.; and considering that there has been no cause for the reduction of tolls, and there-

fore of gross receipts during this period, upon the main line of the Railway, comprising the 64½ miles open in 1847, the Commissioners are of opinion that the present traffic upon the main line of the Lancashire and Yorkshire Railway is at least sufficient to yield the same dividend, 5·78 per cent., that it yielded in 1847 upon the capital expended in the construction of that portion of the line.

From this consideration it would appear that the present pecuniary position of the Company has been brought about, not by the reduction of tolls by the Act of 1846, but by the investment of a capital sum amounting to three times the capital producing revenue at the end of 1847 in 181 miles of Railway, of which 157½ were completed and open for public traffic at the end of 1848, which are either unprofitable speculations, or the Companies have not had sufficient experience fully to ascertain the extent of the traffic upon them. This Railway had at the time of accepting the tariff in the Act of 1846, which also conferred powers for making several Branch Railways, a full knowledge of the capabilities of the district, their main line having been in operation through the heart of it for several years; and therefore the Commissioners, considering that the traffic upon the main line, at the rates of the present tariff, is sufficient to yield a profitable revenue of at least six per cent. upon the capital expended upon it, do not consider that the Company have established a case for the repeal of an Act of Parliament which they obtained and accepted with a full knowledge of its conditions, and with considerable experience to assist them in forming their opinions as to its probable workings, and therefore do not recommend that powers should be granted to the Company to increase their existing tolls.

In arriving at this conclusion, the Commissioners have attached every importance to the consideration, that the tariff should be so fixed as to give a reasonable return upon the capital invested; but, at the same time, they do not conceive that the public using and supporting a Railway in one district, should be made to contribute by high fares to the provision of a reasonable return upon capital invested beyond the immediate limits of their own district, or in a part of the country remote from them, or in a manner from which they can derive no possible benefit; and they are further of opinion, that there is no great cause for apprehension, that the Company will be driven to resort to measures of stringent economy, by which the public convenience would suffer; for as long as any line or part of a line yields a productive revenue, it appears to be to the interest of the main body of proprietors to maintain and develop the traffic upon it, so as to produce the greatest receipts, which will generally coincide with the amount of convenience the public can reasonably expect.

Having reported generally against the increased tariff, the Commissioners do not propose to enter upon the special points in the tariff set forth in this Bill, which appeared to them to require the attention of the House, being departures from the ordinary clauses relative to traffic, such as the terminal charge of 6d., 4d. and 2d. for each person, which with the Six-mile Clause would effectually exclude from participation in the benefit of the Railway those persons who only use it for short distances, and which if enforced would moreover, as in the case of the Liverpool, Crosby and Southport Railway, which joins the Lancashire and Yorkshire within two miles of Liverpool, or of the East Lancashire Railway, which joins it within four miles of Manchester, compel those Companies at an enormous outlay to extend their lines into those towns, or in a great measure withdraw from the public the advantage of more moderate fares. The Company, also, having it in their power to reduce their charges for short distances, could crush competition, after which they might again raise their charges to an unreasonable rate, and so produce inconvenience to the public.

6. LIVERPOOL, CROSBY AND SOUTHPORT RAILWAY (Deviations, Enlargement of Station, Extension of Time for Purchase of Lands and Completion of Works, Reduction of Tolls payable in respect of the Use of Part of the Lancashire and Yorkshire Railway (late the Liverpool and Bury Railway), and Amendment of Acts).

This Company was incorporated by an Act which received the Royal Assent in 1847, by which it was empowered to construct a Railway from a point in the Liverpool and Bury Railway, about 1½ mile from Liverpool, through Crosby, to the town

town of Southport, a distance of 16 miles, of which 13 miles are now open for the conveyance of the public from Southport to Waterloo, leaving a portion of about 3½ miles from Waterloo to the junction with the Lancashire and Yorkshire Railway, still unfinished, and upon which the Company state that the works are in a forward state.

The Company further state, that the traffic upon their line is principally a passenger traffic, and that at present the public are accommodated between Liverpool and Waterloo, their present terminus (about 5½ miles from Liverpool) by omnibuses, which run 70 trips daily, at fares of from fourpence to one shilling. By the powers vested in the Lancashire and Yorkshire, and East Lancashire Railway Companies, who are joint proprietors of the line from the proposed junction to Liverpool, they are authorized to charge for the use of the Railway (exclusive of carriages and locomotive power) for every passenger conveyed in a first-class carriage, by an ordinary train, 1½*d.* per mile, in a second-class carriage one penny, and in a third-class carriage three farthings per mile; and they are empowered to levy for passengers or traffic passing over their line for a less distance than six miles, the same fares as for six miles, making the maximum tolls for the use of their line from the junction to the town of Liverpool, 9*d.*, 6*d.* and 4½*d.* for first, second and third class passengers respectively.

The Liverpool, Crosby and Southport Company state, that these charges are nearly, if not quite, the utmost amount that could be charged with any hope of successful competition, for the whole distance between Liverpool and Waterloo, and therefore, were they subject to them, they could not attempt to compete with the omnibuses running between those places; and that the inhabitants on the line of their Railway will be deprived of the benefit which the Railway communication in their district was intended to afford. They therefore seek for powers by this Bill to amend the Six-mile Clause of the Lancashire and Yorkshire Railway, as applied to the line between Liverpool and the junction, stated to be about 1½ mile in length, and to provide that the owners of the line shall only be empowered to demand tolls as for three miles.

The East Lancashire Railway Company have forwarded to the Commissioners a statement in opposition to the proposed alteration, in which they state that the joint line from the junction to the town has cost at the rate of 250,000 *l.* per mile, including stations; and that therefore the tolls now payable in respect of traffic passing over it a less distance than six miles are unusually moderate and reasonable, and that it would be an injustice to diminish them. They further state, that the Liverpool, Crosby and Southport Railway Company obtained their Act in 1847, with a full knowledge of the tolls payable for short distances; that a Bill is now before Parliament to empower the Liverpool, Crosby and Southport Railway Company to sell or lease their line to the Lancashire and Yorkshire Railway Company, and that the latter Company already use the joint line of Railway to a greater extent than the East Lancashire Railway Company, although they only contribute one-half of the cost of construction. They then in their statement enter upon the advisability of granting the proposed powers of sale or lease; but as this question has not been referred for report to the Commissioners, they have considered only that portion of the statement which applies strictly to the tolls. It appears to the Commissioners that the construction of the Liverpool, Crosby and Southport Railway is of undoubted advantage to the public, and that, to a certain degree, the advantages which the public might have expected from the use of it, will be curtailed by the enforcement to its full extent of the Six-mile Clause, which will either shut the traffic by the Liverpool, Crosby and Southport Railway entirely out of the Liverpool station, and so debar the inhabitants who live along the line, within a few miles of Liverpool, from the use of the Railway, or, which will amount to nearly the same thing, compel the Company to adopt a terminus at a considerable distance from the town, unless they should hereafter seek for and obtain powers to construct another line into the town, which, if the present line is sufficient for the traffic, would be an useless expenditure of capital. At the same time, the Commissioners are fully of opinion that the Companies who have constructed the more expensive portions of the line should be entitled to higher charges than the tolls authorized, if they were to be calculated upon the bare distance, both on account of the great expense of constructing the line, and of the additional accommodation which must necessarily be required for a large omnibus traffic in a station where other business is transacted.

The Commissioners are also of opinion, that it must increase the receipts of all the Companies, and confer a benefit on the public, that the traffic should be carried

over the joint line of Railway into the town of Liverpool, provided the existing lines are sufficient to accommodate the increased traffic, which they have no reason to doubt, and which, by the Act authorizing the junction, seems to have been the arrangement contemplated by Parliament. Under these circumstances, and considering that the Companies authorized to construct this joint line did not, at the time when they obtained their Act, contemplate this addition to their traffic, by the exercise of their powers under the Six-mile Clause, the Commissioners recommend that this subject of such a modification of the Six-mile Clause as will enable the Liverpool, Crosby and Southport Railway Company to convey passengers over the joint line into Liverpool at a moderate rate, should receive the careful consideration of the Committee on the Bill.

The Liverpool, Crosby and Southport Railway Company have also stated that it may be necessary to alter the Bill, so as to allow separate charges to be made for the use of the Railway and for station room, as it appears that the Lancashire and Yorkshire and East Lancashire Railway Companies intend to erect distinct stations at the Liverpool terminus. Under these circumstances, the Commissioners have not entered into the question of the amount of tolls to be charged, as the arrangements upon which they could alone be fully considered are still incomplete.

7. GREAT NORTHERN RAILWAY DEVIATIONS (Amendment of Acts, Alteration of Tolls, and of East Lincolnshire Railway Tolls).

The Great Northern Railway Company have stated to the Commissioners, as the grounds upon which they found their application to the Legislature for an increase of rates, "the generally acknowledged facts that the calculations of Railway profits universally acted upon in the years 1845 and 1846, during the passing of the Great Northern Bill, were erroneous, arising from Railway dividends having been improperly aided by capital, as well as from the extent of traffic of those periods of excitement having been relied upon as regular traffic; and that the subsequent experience of Railways generally has shown that the low rates introduced in 1845 and 1846, do not afford anything like a fair return upon the capital necessarily expended on Railways."

They further state, that the traffic experience of the Great Northern Railway Company, so far as it has gone, has certainly presented these results; and they urge that the Manchester, Sheffield and Lincolnshire Railway Company, having submitted to the reduced fares of 1846, have since obtained an Act by which a tariff exactly similar to that sought by the present Bill was sanctioned.

A copy of a Memorial from the Mayor and Town Council of Boston, stated to have been presented to the House of Commons, has been laid before the Commissioners, in which the memorialists state, "that the provisions of this Bill cause them great alarm, especially Clauses 14, 15 and 16, in which are proposed certain alterations in, and additions to, the rates of carriage upon parcels and packages not exceeding 500 lbs. weight (a class of goods forming by far the greater part of those conveyed by Railway), the charges for conveying which, instead of being, as at present, restricted by Act of Parliament, will (if the clause become law) henceforth be charged such rates as the Company shall think fit; a power which will become prejudicial to themselves and to the public, by adding greatly to the cost of the articles in which they deal, and by driving away their customers to cheaper markets. They further represent that, besides the power to charge what they think fit for the carriage of such parcels and packages, the Company also seek for powers to levy such reasonable sum as they may deem proper for collecting, delivering, &c.; which charges may become a further hardship, by increasing still more the expenses of conveying goods along the line. They also submit, that the Great Northern Railway Company are seeking to secure a continuance of an inquisitorial power given them in their original Act, to open parcels and packages to ascertain whether enclosures are contained therein; and that the Bill also contains various and excessive additions to the rates for conveying passengers and goods.

A comparative statement, by Mr. Morton, of the charges as they are and will become, has also been brought before the Commissioners by Mr. Christopher, M.P., who has drawn to the notice of the Commissioners that the Railway Company has now the monopoly of the water as well as the land carriage of the district, and that the Company obtained powers to construct the Railway mainly on the ground that

that the tolls were low, the management comprehensive, and the benefit to the agricultural district great. An intimation was also received, through Mr. Christopher, that a petition was in course of preparation at Horncastle against the Toll Clauses, as applied to parcels, of a somewhat similar nature to the petition from the Mayor and Town Council of Boston. This petition has not, however, been received by the Commissioners; but as they consider that sufficient time has elapsed for its preparation, they now proceed to report.

The following Table gives a comparative statement of the charges which the Great Northern Railway Company are empowered by their present Acts to demand, of the present charges of the London and North-Western Railway Company, as fixed by existing Acts of Parliament, and of the tariff as proposed by the Bill, from which it will be seen that the present charges of the Great Northern Railway Company are considerably lower than the general average of charges throughout England, below the existing rates on the London and North-Western Railway, with which it may be expected that it will come into active competition, but that their proposed tariff exceeds that of the London and North-Western for passengers, horses and several articles of merchandize:—

ARTICLES, &c.	CHARGES on the Great Northern, as fixed by existing Acts.	CHARGES on the London and North- Western Railway.	TARIFF proposed by Bill.	
	No. 1.	No. 2.	No. 3.	
For all dung, compost, ballast, and all sorts of manure, lime and limestone, and all undressed materials for repair of public roads, per ton	1 d.	$\left\{ \begin{array}{l} 1 \frac{1}{2} d., \text{ and if ex-} \\ \text{ceeding 15 miles} \\ 1 \frac{1}{2} d. \end{array} \right.$	1 $\frac{1}{2}$ d.	$\left\{ \begin{array}{l} - \text{ By No. 1 and No. 3,} \\ \text{in return carriages} \\ \text{which have carried coal,} \\ \frac{1}{2} d. \text{ per ton.} \end{array} \right.$
For all coke, coal, culm, charcoal and cinders, per ton	1 d., and if exceed- ing 24 miles $\frac{1}{2}$ d.	1 $\frac{1}{2}$ d., and if exceed- ing 50 miles $\frac{1}{2}$ d.	1 d., and if exceed- ing 25 miles $\frac{1}{2}$ d.	
For all slack, per ton	2 d.	$\left\{ \begin{array}{l} 1 d., \text{ and if ex-} \\ \text{ceeding 50 miles} \\ \frac{1}{2} d. \end{array} \right.$	- ditto.	
For all stones for buildings, pitching and paving, all bricks, tiles, slates, clay, sand, iron-stone and ore, per ton	$\left\{ \begin{array}{l} 1 \frac{1}{2} d., \text{ and if exceed-} \\ \text{ing 24 miles 1 d.} \end{array} \right.$	$\left\{ \begin{array}{l} 1 \frac{1}{2} d., \text{ and if ex-} \\ \text{ceeding 15 miles} \\ 1 \frac{1}{2} d. \end{array} \right.$	1 $\frac{3}{4}$ d.	
And for all corn and other grain, per ton	$\left\{ \begin{array}{l} 2 d., \text{ and if exceed-} \\ \text{ing 24 miles 1 } \frac{1}{2} d. \end{array} \right.$	$\left\{ \begin{array}{l} 2 \frac{1}{2} d., \text{ and if ex-} \\ \text{ceeding 50 miles} \\ 2 d. \end{array} \right.$	2 $\frac{1}{2}$ d.	
For all pig-iron, bar-iron, per ton	2 d.	$\left\{ \begin{array}{l} 1 \frac{1}{2} d., \text{ and if ex-} \\ \text{ceeding 50 miles} \\ 1 d. \end{array} \right.$	1 $\frac{3}{4}$ d.	
For hoop-iron and all other similar descriptions of wrought-iron, per ton	2 d.	$\left\{ \begin{array}{l} 2 d., \text{ and if ex-} \\ \text{ceeding 50 miles} \\ 1 \frac{1}{2} d. \end{array} \right.$	1 $\frac{3}{4}$ d.	
For sugar, timber, deals, nails, anvils, vices and chains, per ton	2 d.	$\left\{ \begin{array}{l} 2 \frac{1}{2} d., \text{ and if ex-} \\ \text{ceeding 50 miles} \\ 2 d. \end{array} \right.$	2 $\frac{1}{2}$ d.	
For cotton and other wools, per ton	2 d.	$\left\{ \begin{array}{l} 3 d., \text{ and if ex-} \\ \text{ceeding 50 miles} \\ 2 \frac{1}{2} d. \end{array} \right.$	3 d.	
For feathers, canes, cochineal, furniture, hats, shoes, toys, and all other articles, matters and things, per ton	2 d.	$\left\{ \begin{array}{l} 3 \frac{1}{2} d., \text{ and if ex-} \\ \text{ceeding 50 miles} \\ 3 d. \end{array} \right.$	4 d.	
For every person conveyed in a first-class carriage, each	3 d.	$\left\{ \begin{array}{l} 2 \frac{1}{2} d., \text{ by express} \\ \text{train, 2 d. by} \\ \text{ordinary train} \end{array} \right.$	3 d.	- - By No. 1 and No. 3, Company empowered to charge fractional part of sixpence as sixpence.
For every person conveyed in a second-class carriage	1 $\frac{1}{2}$ d.	1 $\frac{1}{2}$ d.	2 d.	- - By No. 3, empowered to charge fractional part of sixpence as sixpence.
For every person conveyed in a third-class carriage	1 d.	1 d.	1 $\frac{1}{2}$ d.	- - By No. 1, for six miles, a sum not exceed- ing sixpence, and for any fractional part of three- pence, as three-pence, with powers to Commis- sioners to prescribe any number of trains daily.
For every horse, mule, ass, each	3 d.	3 d.	5 d.	- - By No. 1, or other animal requiring a sepa- rate box.
For cattle, per ton	4 $\frac{1}{2}$ d.	each 2 d.	each 2 d.	
For calves and pigs	4 $\frac{1}{2}$ d.	each 1 d.	each 1 d.	
For sheep	4 $\frac{1}{2}$ d.	each $\frac{3}{4}$ d.	each $\frac{3}{4}$ d.	
For fish, poultry and meat	4 $\frac{1}{2}$ d.	$\left\{ \begin{array}{l} 3 \frac{1}{2} d., \text{ and if ex-} \\ \text{ceeding 50 miles} \\ 3 d. \end{array} \right.$	4 d.	

ARTICLES, &c.	CHARGES on the Great Northern, as fixed by existing Acts.	CHARGES on the London and North- Western Railway.	TARIFF proposed by Bill.
For every carriage of whatever description having more than two wheels, not being a carriage adapted and used for travelling upon the Railway, per mile	not weighing more than one ton, 4d., and beyond one ton for any fractional part, 2½ d.	4d., unlimited as to weight	5 d. under 1½ ton, and if only two wheels, 4 d.
For the Carriage of Small Parcels :			
For any parcel not exceeding 14 pounds in weight	6 d., and if exceed- 25 miles 1 s.	-	unlimited.
For any parcel not exceeding 28 pounds in weight, for any distance	2 s.	-	ditto.
And for any parcel not exceeding 66 pounds in weight, for any distance	2 s. 6 d.	-	ditto.
For the carriage of any one boiler, cylinder, or single piece of machinery or single piece of timber, or stone or other single article, the weight of which, including the carriage, shall exceed four tons, but shall not exceed eight tons, per ton	4 d.	8 d.	8 d.
For the carriage of any single piece of timber, stone, machinery, or other single article, exceeding eight tons	unlimited	-	unlimited.

Considering that the outlay upon the Great Northern Railway has been very great ; that it does not pass through any very extensive manufacturing districts with a dense population ; and considering, also, the competition to which it will be subject at several points from other Companies, when open throughout its whole length, and that the tolls upon the navigations possessed by the Company are not affected by the Bill ; and considering, also, the particularly low rates of charge now authorized upon the Great Northern Railway, and before referred to as being less than the average rates which other Railway Companies are empowered to levy,—the Commissioners are of opinion that the Company have shown a sufficient reason why Parliament should grant them an amended tariff.

As to the addition which Parliament may think proper to grant, the Commissioners, considering that the Great Northern Railway appear before Parliament seeking an increased tariff instead of one already sanctioned by Parliament, as one of the conditions upon which they obtained their Act of incorporation, and powers to construct their Railway ; considering, also, that the line is only partially opened, the principal portion from Peterborough to London being still unfinished, and therefore that they can have no great experience as to the results of their traffic,—recommend that a tariff on the same scale as that of the London and North-Western Railway, with which it is a directly competing line at many points, should be adopted and conceded to them.

The Commissioners, however, are of opinion, that the clause by which the Company seek to continue their powers to demand from all first and second class passengers sixpence for every fractional part of sixpence beyond an integral number of sixpences, will be objectionable in case Parliament should see fit to concede to the Company a higher tariff than at present, more especially when granted in addition to the usual clauses by which Companies are empowered to charge for less distances than six miles as for six miles, and for fractions of miles as for an entire mile. The principle upon which they object is, that they consider that it tends to keep up the prices chargeable for short distances beyond a reasonable rate. A Railway Company can afford to compete with other conveyances, the property of individuals or smaller companies, at low rates for short distances, so as to prevent them from plying for public traffic ; and after having succeeded in causing them to be withdrawn from a line of communication, the power sought would enable the Company to exact higher charges than would have remunerated the proprietors of those conveyances, if they had been allowed to conduct the traffic unmolested by the competition of the Railway.

The Commissioners find that the power to charge such rates as they think fit for parcels under 500lbs. in weight has been conceded to many Railway Companies, and they are of opinion, therefore, that it may safely be entrusted to the Great Northern Railway Company ; but they entertain great objections to the inquisitorial powers possessed by the Company, and sought to be perpetuated by the present Bill, by which it is rendered unlawful to include in one package several parcels of various sorts, and intended for various individuals, and by which the Company

Company seek powers to demand a separate sum for each such parcel, although many are included in one package. This power may be made to operate so as effectually to prevent competition with them by other parties as carriers, and is contrary to the principle which has been maintained in the case of other Railways.

By the present Bill, the following provisions of former Acts are proposed to be repealed :

That the second-class carriages shall be closed, and have glass windows.

That the third-class carriages shall be covered, and have seats.

That the Company shall run third-class trains every day, as often and upon such conditions as the Commissioners of Railways shall prescribe.

These are some of the conditions upon which the Company obtained former Acts, when the tariff was at a low scale ; and it appears to the Commissioners, that if the charges of the Company are raised, it is due to the interests of the public that these repealing powers should be withdrawn from the present Bill.

The Acts under which tolls or rates are at present demanded by the Great Northern Railway Company, provide that the direct geographical distance, as measured on the Ordnance Map, and not the distance according to the length of Railway, is to be that for which the Company are empowered to charge. This provision will be repealed by the Bill ; and the Commissioners have to remark, that although it appears to have been framed with a view to protect the public, considering the provisions of the Railways Clauses Act, as to the erection of mile-stones, and the enactment that no tolls shall be taken unless they have been erected in accordance with those provisions, and considering the liability to produce litigation which the departure from the ordinary custom produces, the Commissioners are of opinion that its repeal by the present Bill will not operate prejudicially to the interests of the public.

By order of the Commissioners of Railways,

J. L. A. Simmons,
Captain Royal Engineers,
Secretary.

Office of the Commissioners of Railways,
Whitehall, 16 April 1850.

RAILWAY TOLLS.

REPORT of the COMMISSIONERS of RAILWAYS,
in accordance with the Provisions of the Act
9 & 10 Vict. c. 108, on RAILWAY Bills intro-
duced during the present Session, in which it is
proposed to raise or alter the RATES and TOLLS
authorized to be taken under existing Acts of
Parliament. (In compliance with an Order of The
House of Commons of the 19th February 1850).

(*Mr. Wilson Patten.*)

*Ordered, by The House of Commons, to be Printed,
16 April 1850.*

RAILWAY BILLS.

REPORT in compliance with an Order of the Honourable The House of Commons,
dated 13 March 1850; —

“ THAT the COMMISSIONERS of RAILWAYS be directed to Report their Opinion to this House, in accordance with the Provisions of the Act 9 & 10 Vict. c. 105, on any RAILWAY BILLS which have been introduced during the present Session, in which it is proposed to raise or alter the RATES and TOLLS or CHARGES authorized to be taken under existing Acts of Parliament relating to CANAL Undertakings belonging to Railway Companies, or to impose any additional RATES or CHARGES in respect of such CANAL Undertakings.”

THE following Bill appears to the Commissioners of Railways to be the only one now before Parliament comprised under this Order, in which it is proposed to raise or alter the Rates and Tolls or Charges authorized to be taken under existing Acts of Parliament, relating to Canal Undertakings belonging to Railway Companies :—

MANCHESTER, SHEFFIELD and LINCOLNSHIRE RAILWAY, (raising Money by Loan and by Shares in lieu of Loan, Alteration of Tolls and Amendment of Acts.)

ON receiving the Order, the Commissioners of Railways directed a communication, dated 16th March, to be made to the Company, requesting that a statement be forwarded to them of the grounds upon which the Company found their application to the Legislature for the additional powers, with respect to rates and tolls, proposed by this Bill; the Commissioners also informed those parties whom they understood to be opposed to the proposed rates, that they were ready to receive and consider any statements on the subject which they might wish to offer.

In reply to the communication of the Company, a statement was received on the 13th April, informing the Commissioners that an earlier reply was not made in consequence of an action pending to try the validity in point of law of the powers which now exist relative to the two kinds of rates or tolls which the present Bill seeks to establish or confirm.

Although the result of that action is not arrived at, the Company propose to proceed with their Bill, the clauses being so framed as to apply to future, and not to present or pending transactions. The Commissioners therefore propose to consider the clauses as they stand, and to report upon them as if they created an entirely new, instead of a disputed power for raising tolls. The following are the clauses of the preamble, and of the Bill by which the powers are proposed to be taken:—

“ And whereas empty boats, and boats having small cargoes on board, are frequently navigated along the canals belonging to the said Company, or some of them; and it is expedient that better provision should be made
for

for enabling the said Company to levy reasonable rates in respect of such boats, and also to levy reasonable charges for the use of the several wharfs belonging to the said Company, and adjoining to their said Canals : ”

“ Be it enacted, that it shall be lawful for the Company to demand, take, levy and receive, in respect of every boat, barge or other vessel passing through any lock, upon any cut or canal belonging to the said Company, and being empty, or having on board so small a cargo that the tonnage rates payable thereon would not amount to 3*s.*, such rates or charges as they the said Company shall think fit, not exceeding the sum of 3*s.* on each such cut or canal.”

“ And be it enacted, that it shall be lawful for the Company to demand, take, levy and receive for all goods, wares and merchandize which shall be put on board any boat, barge or other vessel, at, from, or from off any wharf belonging to the said Company, or which shall be landed from or out of any boat, barge, or other vessel, upon or at any wharf belonging to the said Company, such wharfage rates or charges not exceeding 3*d.* per ton, as they the said Company shall think fit ; and such wharfage rates shall be independent of, and in addition to any tonnage rates which the said Company are entitled to charge under the provisions of the said recited Acts relating to the canals, comprised in their Canal Undertaking or any of them.”

The Company in their statement have set forth that charges of this description have long been levied on the Railway Company's canals, the wharfage charge almost uniformly, the empty boat charge occasionally, according to the circumstances of the traffic, and the necessity and policy of the particular charge at the time.

As to the charge for the use of wharfs, the Company state that most Canal Acts warrant it, and most Companies levy it ; and the objection in the present case turns rather upon the *mode* of *user* than the *fact* of *user* of the Company's wharfs. They also state that the opponents to the Bill say, that unless they actually lay their goods upon the wharf, they are not liable to wharfage rates ; whereas the Company say, that if the boats are laid alongside the wharfs, and the goods loaded direct from boats on the canal to carriages standing on the wharfs, or *vice versa*, the charge is in common justice payable ; that the Company's wharfs are actual wharfs, and not mere roads ; and such of the traders as do not make use of these wharfs in the town, the sites of which are most costly, are under the necessity of providing wharfs of their own, either by purchase or by renting.

In reply to the communication addressed to those persons whom the Commissioners understood to be opposed to the proposed Bill, two statements have been received :

1. From the South Lancashire Coal Proprietors, in which they state that, in existing Acts, by which the Canals are vested in the Railway Company, Provisions are inserted empowering the Commissioners of Railways from time to time to regulate the amount of maximum rates, on complaint made to them that they operated prejudicially to the persons using the Canals ; that they have reason to believe that the empty boat charge is not intended to apply to the coal traffic on the Canal, but that, as the Bill stands, all boats which carried coals along the Canals would, upon their return, become again liable to toll ; that the freights made by boats employed in this traffic, which do not carry return cargoes, are earned by the conveyance of coal one way only ; that with regard to the wharfage charge, it might be argued that the words “ all goods, wares and merchandize ” do not include coal ; but an unfavourable construction being put upon them might be highly injurious to the coal traffic.

2. From

2. From Messrs. Boothman and Babington, of Manchester, lime-burners, who state, that no boats pass empty along the said Canals but such as have carried or return laden with goods, upon which tonnage-rates accrue to the Company. That although, in respect of the Macclesfield Canal, a toll is specifically imposed upon empty boats by the Act under which it was constructed, no such toll has ever been demanded or received. That no toll was ever demanded by the Peak Forest Canal Company, and only to a limited extent by the Ashton Canal Company; and that no assistance is given by the Company's servants to boats passing the locks on their Canals.

The following Table shows the Canals possessed by the Company, with their lengths, the number of locks upon each, and the number of lock-keepers and persons employed :—

CANALS.	Length.	Locks.	Lock-keepers.	Total Persons employed in performing Services of Canals, including Repairs.	REMARKS.
	<i>Miles.</i>				
Ashton - - -	17½	18	9	38	Cost of pumping water, 300 l. per annum.
Peak Forest - - -	15	16	3	39	
Macclesfield - - -	26½	13	2	21	
Chesterfield - - -	46	65	12	35	
				133	{ exclusive of 1 Canal Engineer.

The Ashton, part of the Peak Forest, and the Macclesfield Canals, together form a link, connecting the system of Canals in Manchester with the Trent and Mersey Navigation, near Congleton. The remainder of the Peak Forest is as it were a branch Canal from the former line, from the termination of which the Cromford and High Peak Railway forms a communication with and through a considerable part of Derbyshire. The Chesterfield Canal runs through the same district as the Manchester, Sheffield and Lincolnshire Railway, connecting that district with the River Trent, and through it with the Humber and the sea, and the system of inland navigation proceeding from the Trent. It, therefore, not only is a directly competing Canal with the Railway throughout its own length, but is an important link in a navigation of considerable extent, which, beyond its own immediate limits, continues in competition with the Railway.

By this Bill, the empty boat charge can be levied on each of the cuts or Canals belonging to the Company, and could therefore be levied three times : on a boat passing over the Macclesfield Canal, and on to Manchester, and twice from the Peak Forest Canal to Manchester, being a very large increase on the tolls, if calculated only upon the tonnage rate, according to the freight carried in one direction.

The Railway Company, in the Acts by which they obtained possession of these Canals, were limited as to the rates of tolls and charges which they could levy upon the Canals, a maximum being in each case fixed, in no case exceeding the tolls and charges levied at the time of the amalgamation, it being specially enacted, 9 & 10 Vict. c. 267, s. 20, that the maximum rates, tolls and duties to be charged or received by the Railway Company in respect of the navigation, or use of the Peak Forest and Macclesfield Canals, shall not exceed in amount the rates, tolls and duties charged or received by the Canal Companies at the time of the passing of the Act.

On inquiry from the officers of the Company, it appears that the empty boat charge was not levied on the Peak Forest Canal, nor on the Macclesfield Canal, and only partially so on the Ashton Canal, and in case of dry seasons only on the Chesterfield Canal.

4 REPORT OF THE COMMISSIONERS OF RAILWAYS

From a statement received from the Company, it appears that a reduction of traffic has taken place upon the Canals, as shown by the following Table :—

C A N A L S.	Yearly Rental.	Number of Tons.				
		1845.	1846.	1847.	1848.	1849.
Ashton Canal, leased to Railway Company in 1848; 11 & 12 Vict. c. 86 - - - - -	£. s. 12,363 15	Year ending June 570,166½	Year ending June 626,982½	Year ending June 573,848	Year ending June 466,188	Year ending December 501,075½
Peak Forest Canal, leased to Railway Company in 1846; 9 & 10 Vict. c. 267 - - - - -	9,324 18	Year ending March 413,999½	Year ending March 493,365½	Year ending March 457,460	Year ending December 343,549½	377,858
Macclesfield Canal, leased to Railway Company in 1846; 9 & 10 Vict. c. 267 - - - - -	6,605 -	239,689½	304,971½	251,850½	270,816½	255,512
Chesterfield and Gainsborough Canal, amalgamated with Manchester and Lincoln Union Railway Company, and afterwards vested in Manchester, Sheffield and Lincolnshire Railway Company; 9 & 10 Vict. c. 358	Capital 100,000 -	Year ending September 165,511	- - -	- - -	201,544	195,211
		1,389,366½	- - -	- - -	1,282,097½	1,329,656½

C A N A L S.	Tonnage, including Wharfage and Light Dues.					REMARKS.
	1845.	1846.	1847.	1848.	1849.	
	£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. s. d.	
Ashton - - -	Year ending June 14,933 9 5	Year ending June 15,558 5 5½	Year ending June 14,180 3 7½	Year ending June 11,517 1 10	Year ending December 12,801 8 2	
Peak Forest - -	Year ending March 14,070 8 1½	Year ending March 17,951 13 1½	Year ending March 14,756 6 8½	Year ending December 10,852 6 1½	12,615 4 2½	
Macclesfield - -	10,438 2 2½	12,483 19 6½	8,629 16 10½	8,045 4 9½	7,623 8 2	
Chesterfield and Gainsborough - -	Year ending September 12,795 11 7	Year ending September 13,072 15 -	* 4,918 2 6	12,429 2 1	11,574 10 9	{ * From 8 Aug. to 31 Dec. 1847.
£.	52,237 11 3½	59,066 13 1½	42,484 9 8½	42,843 14 10	44,614 11 3½	

From the foregoing Table, it will appear that the traffic on all the Canals at present owned by the Manchester, Sheffield and Lincolnshire Railway Company, amounted in the year 1844-5 to 52,237 *l.* 11 *s.* 3 *d.*, and in the year ending December 1849, to 44,614 *l.* 11 *s.* 3 *d.*, to cover a rental of 28,293 *l.* 13 *s.* for the Ashton, Peak Forest and Macclesfield Canals, and interest upon a capital sum of 100,000 *l.* for the Chesterfield Canal, together with the expenses of wages and maintenance performed by 134 men, including one canal engineer, and of pumping, stated to cost 300 *l.* per annum.

The quantity of goods carried upon the Canals also in the year 1844-5 amounted to 1,389,366½ tons, and in 1849 to 1,329,656½ tons, from which it would appear that these Canals, notwithstanding the construction of Railways directly competing with them, still provide a very important means of communication in a district where the population is dense, the manufactures numerous, and minerals abundant.

From

From this statement, derived from the Company, the Commissioners are of opinion that the Company do not suffer much, if any, loss by these Canal Undertakings; and considering the great importance attached by a Select Committee of the House of Commons on Railways' and Canals' amalgamations, who fully considered the subject in 1846, in Reports which were before Parliament at the time of the passing of the Acts, vesting these Canals in the Railway Company, and that The Legislature attached much importance to the imposition of a moderate scale of tolls and charges, in the case of Canals amalgamating with Railways, and considering also that the Railway Company in obtaining their Acts must have anticipated a reduction in the Canal traffic, at least as great as has taken place whenever they should have constructed and opened their Railways for public traffic, the Commissioners are of opinion that it would not be advisable that the Company should be empowered to charge a fixed toll upon all empty boats passing through the locks upon their several cuts and canals. At the same time, as it appears that boats having conveyed freights through canals belonging to other Companies may possibly return empty through the Canals belonging to this Company, thereby consuming the water provided for their Canals, and committing a fraud upon the Company, by not having conveyed cargoes upon which tonnage rates would accrue in one direction, the Commissioners are of opinion that a power should be acceded to this Company, to make a charge upon all empty boats which may pass through their cuts or Canals, and which do not travel laden in one direction. The Commissioners are of opinion, however, that the wharfage charge having been in force on the Canals prior to their amalgamation with the Railway, may reasonably be charged where wharves are provided by the Company, and therefore, as desired by them in the statement laid before the Commissioners; but a proviso should be inserted in the Bill, exempting from such charge all goods loaded into boats at wharves not belonging to the Company.

By Order of the Commissioners of Railways,

J. L. A. Simmons,
Captain Royal Engineers,
Secretary.

Office of the Commissioners of Railways,
Whitehall, 7 May 1850.

RAILWAY BILLS.

REPORT of the COMMISSIONERS of RAILWAYS,
in accordance with the Provisions of the Act
9 & 10 Vict. c. 105, on RAILWAY BILLS intro-
duced during the present Session, in which it is
proposed to raise or alter the RATES and TOLLS
or CHARGES authorized to be taken under
existing Acts of Parliament. (In compliance
with an Order of The House of Commons of
the 13th March 1850.)

(*Mr. Wilson Patten.*)

Ordered, by The House of Commons, to be Printed
8 May 1850.

REPORT
OF
THE COMMISSIONERS
APPOINTED TO MAKE INQUIRIES RELATING TO
SMITHFIELD MARKET,
AND THE
MARKETS IN THE CITY OF LONDON
FOR THE SALE OF MEAT.

Presented to both Houses of Parliament by Command of Her Majesty,

LONDON:
PRINTED BY W. CLOWES AND SONS, STAMFORD STREET,
FOR HER MAJESTY'S STATIONERY OFFICE.

1850.

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6. Plan for the extension of Smithfield Market, proposed by the Markets Improvement Committee of the Corporation of London.
7. Plan showing the site of the proposed New Market and the surrounding property.

COMMISSION.

VICTORIA R.

VICTORIA, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith. To Our trusty and well-beloved George Cornwall Lewis, Esquire; Sir James Duke, Baronet; Sir Harry Verney, Baronet; William Miles, Esquire; Richard Owen, Esquire, Hunterian Professor in our College of Surgeons in England; Frederick Byng, Esquire; and John Wood, Esquire, greeting: WHEREAS We have thought it expedient for divers good causes and considerations that a Commission should forthwith issue to inquire and consider whether any and what means can be properly and beneficially adopted for carrying into effect the recommendations of a Select Committee of the House of Commons, appointed in the session of 1849 to report upon Smithfield Market, and also to inquire into the state and management of all Markets in the City of London for the sale of meat.

Now know ye that We, reposing great trust and confidence in your knowledge and ability, have authorized and appointed, and do by these presents authorize and appoint you, the said George Cornwall Lewis, Sir James Duke, Sir Harry Verney, William Miles, Richard Owen, Frederick Byng, and John Wood, to be our Commissioners for the purposes aforesaid. And for the better enabling you to carry these Our Royal intentions into effect, We do hereby authorize and empower you, or any three or more of you, to call before you such persons as you shall judge likely to afford you any information upon the subject of this Our Commission; also to call for, have access to, and examine all such Books, Documents, Papers, and Records as may afford the fullest information on the subject, and to inquire of and concerning the premises by all other lawful ways and means whatsoever.

And We do by these presents will and ordain that this Our Commission shall continue in full force and virtue, and that you Our said Commissioners, or any three or more of you, may from time to time proceed in the execution thereof, and of every matter and thing therein contained, although the same be not continued from time to time by adjournment.

And Our further will and pleasure is, that you Our said Commissioners, or any five or more of you, upon due inquiry into the premises, do report to us in writing, under your hands and seals, your several proceedings under and by virtue of this Our Commission, together with what you shall find touching or concerning the premises.

And We further ordain, that you or any five or more of you, may have liberty to report to Us your proceedings under this Our Commission, from time to time, should you judge it expedient so to do.

COMMISSION.

And for your further assistance in the execution of these presents, We do hereby authorize and empower you, or any three or more of you, to appoint a Secretary to this Our Commission, whose services and assistance We require you to use from time to time as occasion may require.

**Given at Our Court at St. James's the Twenty-third Day of November, 1849,
in the Thirteenth Year of Our Reign.**

By Her Majesty's Command,

G. GREY.

REPORT.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

YOUR Majesty having been graciously pleased to issue a Commission under your Royal sign manual, bearing date the 23rd day of November, 1849, and to appoint, authorize, and direct us, Your Majesty's Commissioners therein named, "to inquire and consider whether any and what means can be properly and beneficially adopted for carrying into effect the recommendations of a Select Committee of the House of Commons appointed in the session of 1849, to report upon Smithfield Market; and also to inquire into the state and management of all markets in the City of London for the sale of meat, and to report thereon to Your Majesty;"

We, Your Majesty's Commissioners, having made due inquiry into these matters, in the execution of Your Majesty's commands, now humbly beg leave to report our proceedings, the nature and result of our inquiries, and the conclusions which we have formed thereon.

We judged it proper, as our first step, to open a communication with the authorities of the City; and we addressed a request to the Town Clerk that the Corporation would appoint a deputation to confer with us upon the subjects embraced by our Commission. This request was laid before the Court of Common Council, who referred it to the Markets Improvement Committee, with power to appoint a deputation for holding such conference. We subsequently had an interview with the deputation so appointed, when we explained to them the nature of the inquiry intrusted to us, and solicited such assistance and information as appeared necessary to full investigation. We requested to be furnished with written statements of the legal regulations under which Smithfield market and the other meat markets are governed; with accounts of their revenue and expenditure, and plans of the markets and the approaches to them; and also with statements of the principal advantages resulting from the existing state of the markets; or of any disadvantages, with suggestions for their removal.

Appendix p. 137.

Appendix p. 137.

We next proceeded to the examination of various witnesses; among whom were the officers appointed to the markets, several persons practically acquainted with the business of these markets, the agents and managers of companies employed in the carrying trade by which the markets are supplied both with live and dead meat, and one of the principal bankers connected with the money transactions of Smithfield. We heard some statements as to the loss of custom to be anticipated from the removal of the market, by tradesmen whose business is connected with those attending it; and, lastly, we sought information upon those influences which the large markets may have upon the health, morals, and good order of the metropolis. Upon the application of the Islington Market Company we also examined a deputation representing the interests of that body in the market erected at Islington under a local Act of 1845 (5 and 6 Wm. IV., cap. 111), as a market for the sale of live stock in the metropolis; and we have appended all the evidence to our Report.

Evidence, p. 74.

The resolutions of the Select Committee of the House of Commons, to which we are specially referred by our Commission, affirmed the expediency of removing Smithfield market, but left to Your Majesty's Government the consideration and settlement of this question; and of other matters connected with the markets upon which the Committee did not express an opinion. The resolutions of the Select Committee are as follows:—

"Resolved,—That it is the opinion of this Committee that the continuance of a market for the sale of live stock in Smithfield is proved by experience to be attended with serious inconveniences and objections, and that it ought to be removed.

"Resolved,—That it is the opinion of this Committee, that these inconveniences and objections have been of late years in some degree mitigated by the care and attention of the Corporation of the City of London, but that so long as the market continues to be held in its present situation the inconveniences referred to will not admit of prevention.

"Resolved,—That it is the opinion of this Committee that, in providing market ac-

"commodation for the sale of cattle in substitution for Smithfield market, due care should be taken to ensure sufficient space, not only for the present, but also for the future wants of the metropolis.

"*Resolved*.—That it is the opinion of this Committee that there has been great benefit to the health of the neighbouring inhabitants from the presence of a large open space, such as Smithfield, in the midst of a densely populated district; the Committee, therefore, trusts that in any contemplated alterations, the greater portion of the present open space may be retained.

"*Resolved*.—That it is the opinion of this Committee, that, in accordance with the tenor of the evidence, only one great metropolitan cattle market can exist; and that, therefore, in the selection of its site regard should be had to the position of the railway termini, the place of the disembarkation for Scotch, Irish, and foreign cattle; the bridges, especially Blackfriars; and to the density of the population in the neighbourhood of such site.

"*Resolved*.—That, in reference to the propriety of constructing abattoirs, of placing slaughter-houses, both public and private, under inspection, and the necessity of a more vigilant superintendence of the markets, of both live and dead stock, to prevent the sale of meat unfit for human food, the alteration of the Market-day from Monday to Tuesday, and the establishment of lairs, with a sufficient supply of food and water for cattle, upon which the Committee has incidentally received evidence, the Committee forbear to express an opinion; but looking at the immense importance of the supply of animal food to this vast and rapidly increasing metropolis, and the variety and magnitude of the interests involved in the satisfactory settlement of this question, they desire to express an earnest hope that the Government will take the whole matter into their early and serious consideration."

"22 June, 1849."

We are further directed, by our Commission, to inquire and report upon the meat markets of the City. These are—

1. Newgate market,
2. Leadenhall market,
3. Farringdon market,

of which Newgate market is, by far, the most important.

We now proceed to state the result of our inquiries into the state of these several markets.

SMITHFIELD MARKET.

Smithfield has been a market-place almost as far back as the history of London reaches; and the market is held there by the Corporation by prescription, confirmed by charters and by Acts of Parliament.

Appendix, p. 138.

In 1327 King Edward III., in the first year of his reign, granted by his charter, amongst other things, that 'no market should thenceforth be granted by the King or his heirs to any within seven miles in circuit of the City of London.'

The market, with the tolls, is also confirmed to the City of London, by the charter of the 14th of Charles I. (1638), which was further confirmed by the *Inspeximus* Charter of Charles II.

The City's rights and liberties having been seized under a writ of *quo warranto* in the reign of King Charles II., the Act of the 2nd William and Mary, chap. 8, was passed, by which the judgment against the City was declared to be illegal and arbitrary; and the rights, markets, and liberties of the City were, amongst other things, restored to them peaceably to have and enjoy.

The Islington Market Act (5 and 6 Wm. 4., chap. 111), recites the City's title to Smithfield market, and the prohibition against erecting any new market within seven miles of it (in support of which the opinions of the Judges were given in the House of Lords), and grants compensation to the City for any loss they might sustain by the diminution of the tolls and profits of Smithfield consequent on the establishment of the new market at Islington.

The ancient area of the market, which is stated by credible witnesses to have originally suffered by encroachments, has in later years been several times enlarged by purchase, and the ownership of such additional space is also vested in the Corporation.

● Stowe's Survey, Edit., 1754, p. 717.

Smithfield is the great and almost the sole market for the supply of the metropolis with live stock. The certain demand and large weekly sales have been met by ample supplies of horned cattle, calves, sheep, lambs, and pigs of different breeds and kinds suited to the various wants of the numerous purchasers. It is also an ancient market for the sale of horses, the horse-fair commencing on the termination of the cattle-market, and on three separate market days in every week hay and straw are sold.

The market days are, for live stock and horses, Monday and Friday, but the principal sale is on Monday; and for hay and straw, Tuesday, Thursday, and Saturday. The drovers begin to drive their cattle into the market immediately after 12 o'clock on the Sunday night preceding the Monday's market, and large droves of beasts are collected in the adjacent streets waiting till that hour has struck. For the Friday's market the cattle arrive about four or five o'clock in the morning. When the market is large, the cattle continue to be brought in as space is made by the sale and removal of others, till eight or nine o'clock. The business of the market commences with day-light in the winter season, and about five o'clock in the summer. The chief sale is over early in the forenoon, and the market is closed at three o'clock p.m., pursuant to Act of Parliament and the regulations of the Corporation; and then, as has been already stated, the sale of horses begins.

The tolls and dues are demandable pursuant to ancient custom, and are regulated by the Court of Common Council.

Tolls.

Sheep.—For every score of sheep sold (belonging to non-freemen) 2*d.* per score.

Beasts.—For every score of beasts sold (belonging to non-freemen) 20*d.* per score.

Horses.—For every entry of sale 4*d.* each.

Pigs.—For every score 4*d.*

Dues.

Pens for Sheep, Calves or Pigs.—Permanent pens 1*s.* each; hurdle pens 10*d.* each.

Ties for Beasts or Calves.—1*d.* each; for horses 2*d.* each.

Hay Duty.—6*d.* per load (unless the property of freemen), and for each entry of sale 1*d.*

Straw Duty.—1*d.*; for each entry of sale 1*d.*

The clear net annual income arising from these sources to the Corporation of the City of London (after deducting all charges and expenses) was, on an average of the five years ending with December, 1848, 5,547*l.*

We are indebted to the Markets Improvement Committee for the following balance sheet of the revenue and expenditure of Smithfield market for the year ending 31st December, 1848, which was made out for our information in pursuance of their order.

REVENUE.				ORDINARY EXPENDITURE.			
<i>General Produce.</i>							
	£.	s.	d.		£.	s.	d.
To gross produce of sheep, calf, and pig pens	5,307	10	0	By rent, rates, taxes, &c.	1,365	8	4
Ditto beast ties	864	18	11	By salary to clerk of market, and collector	300	0	0
Ditto calf ties	120	4	8	By salary to veterinary surgeon	50	0	0
Ditto horse ties	107	4	6	By expenses of repairs	397	8	6
Ditto hay duty	146	11	3	By ditto of rope	72	0	0
Ditto straw duty	4	2	8	By ditto of gas	110	0	6
Ditto drovers' licences, Bartholomew Fair, and incidental receipts	81	7	0	By sundry incidental expenses	86	2	8
	6,631	19	0		2,381	0	0
Deduct wages to assistant collector, and petty expenses	123	0	0	EXTRAORDINARY EXPENDITURE.			
<i>Net General produce</i>	6,508	19	0	By expense of enlargement	1,000	0	0
Tolls.				Total	3,381	0	0
To gross produce of tolls on beasts	921	11	7	Balance, being the excess of revenue over expenditure	4,641	9	10
Ditto sheep	565	13	0				
Ditto horses	0	9	0				
Ditto pigs	31	2	3				
	1,518	15	10				
Deduct petty expenses	5	5	0				
<i>Net Tolls</i>	1,513	10	10				
Total	£8,022	9	10	Total	£8,022	9	10

The Court of Mayor and Aldermen make rules and ordinances for the regulation and government of the market. The general superintendence, management, and revenues, have, since 1835, been placed under the charge of a Committee of the Common Council, styled "The Markets Committee." The chief officers of the market are—

1. *The Manager and Collector*.—He describes his duties to consist of the

Shank.
Ho. Comm. Rep., 1849,
p. 187.

Ho. Comm. Rep., 1849
Appendix, p. 405.

Evidence.
Shank, 1624-5.

Evidence.
Fisher, 741.

superintendence of the arrangements of the market. He learns from the different salesmen, prior to each market, the number of sheep or beasts for which they require standings, and he apportions to them severally the accommodation which they require, so far as the space will permit. He collects the tolls and dues and accounts for each sum received weekly; he prepares the annual accounts; he also keeps an account of the hay and straw sold, and grants the licences to drovers. He is appointed by the Lord Mayor, Aldermen, and Common Council.

2. *The General Inspector of Markets.*—This officer is appointed by the Lord Mayor, under the stat. 11 & 12 Vict., c. 107. His duties, so far as relate to Smithfield, are to seize and cause to be destroyed any sheep or lambs infected with contagious disorders, and to proceed against any persons exposing infected horned cattle for sale. His statutory authority will expire on the 1st September next.

The total area of the market, including the public roads and thoroughfares by which it is intersected from south to north, and from west to east, is six acres fifteen poles. This area comprises three irregularly shaped separate plots of ground, which abut upon each other on only one of their sides, and are not from their shapes well adapted to afford for the purposes of a market the full value of that amount of disposable space. The cattle-market occupies the south plot, and is calculated to provide rails for tying 2,750 oxen; the irregular formed plot to the east, the small centre space where the three plots join, and the small square plot to the west, are occupied by 1,506 pens, calculated to hold 30,000 sheep, 1000 pigs, and 500 calves. There are seven roads leading into the market, their widths, at the entrance to the market, measuring from house to house and extending over the footways, are—

	Feet.	Inches.
Giltspur-street	63	0
Honey-lane	15	11
King-street	30	10
West-street	16	4
Smithfield-bars	53	0; but narrowing a few
yards from the market to	34	9
Long-lane	31	9
Duke-street	25	0

The business of the market is almost exclusively conducted by salesmen, of whom it is stated that there are about 600. Graziers seldom attend the market, either because they find it inconvenient, or because they obtain better prices for their stock by consigning it to a salesman who knows the butchers frequenting the market and the different descriptions of stock which each requires to suit his customers. The stock is delivered to the salesman on the forenoon preceding the market-day, and it is then examined by him, and an estimate formed of the prices it will realize. His drover brings it into market from the railroad, wharf, or lair; it is then sold by him to the butcher at the market price of the day, and driven from the market by the drover employed by the butcher. The butcher immediately pays the price of his purchase into the salesman's account at his banker's; on the termination of the day's market, the salesman attends at the banker's office and makes out an account of the sale, and the banker either remits the money to the grazier by that night's post or pays it into his credit at a London banker's on the following morning. These bankers, of whom there are seven, have their offices in Smithfield, and their business is exclusively confined to the transactions of the market. The average amount of money passing through one bank, said to be one of the principal, is stated to be from 35,000*l.* to 40,000*l.* every Monday's market. The transactions of the market are always for ready money; but the banker sometimes accommodates the butcher by giving credit from one market-day to another, and advancing the amount of his purchase to the grazier.

Evidence.
Hill, 2278-9.

Ho. Comm. Rep. 1849.
p. 376.

We have attempted to form an accurate estimate of the number and value of the live stock annually sold in Smithfield. We find it stated in the evidence given before the House of Commons Committee in 1849, by Mr. Richard Hicks (an extensive salesman in Newgate market, whom we also examined), that he had taken some pains to arrive at a correct approximation for the year 1848, and he gave these results :—

224,000 horned cattle,	at 18 <i>l.</i> 10 <i>s.</i> each	4,144,000
1,550,000 sheep	at 1 <i>l.</i> 18 <i>s.</i> each	2,945,000
27,300 calves	at 3 <i>l.</i> 15 <i>s.</i> each	102,375
40,000 pigs	at 1 <i>l.</i> 10 <i>s.</i> each	60,000

£.7,251,375

Mr. Giblett, a witness who afforded us much valuable information, made the following calculation. He stated that he was not aware of Mr. Hicks' estimate, that his calculation was founded upon the prices of 1849, which were lower than those of 1848, on which Mr. Hicks' estimate was based, but that it was a matter of speculation and judgment to determine upon a fair average price, and he thought his estimate rather under the truth:—

Evidence, 1906.

280,000 beasts, at 16 <i>l.</i> each	3,328,000
1,560,000 sheep, at 1 <i>l.</i> 15 <i>s.</i> each	2,730,000
20,800 calves, at 4 <i>l.</i> each	83,200
20,800 pigs, at 2 <i>l.</i> each	41,600

£.6,182,800

We examined Mr. Shank, the clerk of the market, with a view to ascertain the amount of the stock annually sold. He stated that the number of sheep returned as sold is considerably greater than the actual number sold; and that the salesmen are in the habit of paying toll for more than they have in the market for the purpose of getting room and gaining an advantage over their neighbours. He described this as a regular practice, and he estimated that it would cause a fictitious addition of at least 4,000 sheep in the numbers accounted for on each Monday's sale. Mr. Shank furnished us with the annexed statement of what he estimated to be the actual number of sheep, calves, and pigs sold in 1848. To this we have added the number of beasts returned in the Chamberlain's weekly statement of the sales in that year, and calculating the value on the mean of the above estimates by Mr. Hicks and Mr. Giblett, we arrive at the following results:—

Evidence.
Shank, 1644-5-9.

Appendix p. 148.

236,975 beasts, at 17 <i>l.</i> 5 <i>s.</i> each	4,087,819
1,291,770 sheep, at 1 <i>l.</i> 16 <i>s.</i> 6 <i>d.</i> „	2,357,479
28,856 calves, at 3 <i>l.</i> 17 <i>s.</i> 6 <i>d.</i> „	111,817
27,350 pigs, at 1 <i>l.</i> 15 <i>s.</i> „	37,862
	<hr/>
	£.6,594,977

To complete the statement of the business of the market, it remains to add that 12,867 horses were exposed for sale in the year 1848 (no account being kept of the actual sales), and that 18,537 loads of hay, and 1,751 loads of straw were sold in that year.

Smithfield has, since the Charter of Edward III., granted in 1327, been the sole market for the supply of the metropolis with live stock. Experience has shown the tendency of the metropolitan cattle trade to support only one large market, and Smithfield has thus received the constantly increasing supplies required for the growing population by which it is surrounded. Stowe, who wrote in the year 1698, says:—"It has been calculated that the number of cattle sold in Smithfield, and within the bills of mortality, one year with another, are

Stowe's Survey, Ed.,
1754, p. 719.

" Neat cattle, or oxen, or cows	70,000
Sheep and lambs	540,000
Calves	200,000
Hogs and pigs	252,000."

Maitland, in his "History of London," gives the actual number of cattle sold in Smithfield on each market-day in the year 1725, taken from the accounts of the clerk of the market. Their total amounts are,

Ed. 1772, p. 756-7.

Bulls, oxen and cows	73,691
Sheep and lambs	555,620

He adds, that the metropolitan supply of cattle obtained through other sources would cause an addition of one-third to the above numbers; and he estimated the number of calves sold in the metropolis (of which only an inconsiderable number were sold in Smithfield) at about 194,732, and of pigs at 186,932.

The return of the City Chamberlain, appended to the House of Commons Report of 1828, makes the number of animals sold in Smithfield in the twelve months ending with April in that year:—

Cattle	155,714
Sheep and lambs	1,412,080

C 2

A similar return, appended to the House of Commons Report of 1849, shows the following numbers sold in 1848:—

Cattle	.	.	.	.	.	236,975
Sheep and lambs	.	.	.	.	.	1,417,010

The constantly increasing supply evidenced by these returns, has suffered no interruption, except with regard to the sheep, which reached their present maximum in 1844, when in nineteen markets in the latter part of that year the number exceeded 30,000, and in one market reached 39,920. But we shall revert to this subject in connexion with the dead-meat market.

Smithfield draws its chief supplies from the eastern and north-eastern counties of England; from the midland counties of Leicester, Derby, Warwick, Northampton and Cambridge; and from Bucks and other counties surrounding the metropolis. Large numbers of cattle are also received from Scotland, and there is now a regular supply of foreign cattle, calves and sheep, brought from Hamburgh, Rotterdam and Tonnigen; and latterly, cattle have arrived from the ports of Spain and Portugal.

The foreign cattle imported are consigned to London salesmen, and it may be assumed, that they are almost exclusively sold in Smithfield market. In the last year, the number of live animals imported was—

Oxen and bulls	.	.	.	.	.	21,751
Cows	.	.	.	.	.	19,921
Calves	.	.	.	.	.	13,645
Sheep and lambs	.	.	.	.	.	129,265
Swine and hogs	.	.	.	.	.	2,653

The introduction of steam-carriage has entirely changed the mode of bringing stock into the market, and has greatly added to the number of places from whence the supplies are derived. The great supplies from Norfolk, Suffolk, Essex, Cambridge and Lincolnshire come by the Eastern Counties Railway; the average time of the transit from Norwich to London (110 miles) being seven and a half hours. From the Midland and Western Counties, they are brought by the North Western and Great Western Railways. Cattle from the North are brought from the ports of Hull, Berwick, Aberdeen and Inverness, by vessel into the Thames; but latterly, some have arrived from Scotland by railway. The foreign cattle are also brought into the Thames, and landed in the Pool. Cattle arriving by railway are usually sent to the lairs, where they remain for twenty-four hours, and are then driven into the market.

The extent to which railway carriage is now employed in the transport of live stock, and its influence upon the questions referred to us, will be appreciated from the fact given in evidence to us by the traffic manager of the Eastern Counties Railway Company, that the stock carried on that railway in the last year amounted to 57,300 oxen, 275,000 sheep, and 15,000 pigs and calves.

Smithfield is bounded on the east by St. Bartholomew's Hospital and the houses which abut upon Cloth Fair, and runs in a north-east direction along part of Long-lane, of which it forms at this end the north side; on the north it extends beyond the limits of the City, among the close courts which communicate with Charter-house Lane, and returns westward by Smithfield-bars to the east end of West-street and King-street, narrowing to a point on the south at its chief approach from Giltspur-street.

If it be considered with regard to the distribution of the population of London, Smithfield is placed out of the centre in a northerly direction, and a circle drawn on a two mile radius around Charing-cross (from which Smithfield is distant nearly one mile and a half) would include a greater proportion of the more densely populated parts of the metropolis than a similar circle drawn round Smithfield; but Smithfield is in the closest proximity to the centre of the business of the metropolis. It is accessible from the pool and the docks, from which it receives large supplies. It is close to the two great arterial lines of street communication from the western suburbs; the one leading by Oxford-street and Holborn, and running in a north-east direction through the market; the other by Piccadilly, the Strand, and Fleet-street—these great lines of approach continuing eastward by Cheapside and Whitechapel, and diverging into the Mile End road and the Commercial-road. On the south the approach is now excellent by Farringdon-street, Blackfriars-bridge, and the Blackfriars road, the thoroughfares northward crossing the market in two directions; and to the less densely populated district on the north, St. John-

Evidence.
Moseley, 1869.
Willoughby, 1303.
Chippingdale, 1322.

Evidence.
Moseley, 1871.
Hayward, 1290-3.
Willoughby, 1303.

Evidence
Moseley, 1901.

street forms a direct outlet. These great thoroughfares, converging in the direction of Smithfield, render the great market for the supply of the metropolis accessible from all parts.

The advantages of this central position, and of these means of access, are obvious. They offer conveniences to the buyers scattered over the whole of the metropolis, as well as for the transaction of all the details of general business. The close proximity of Newgate market is another great convenience, and one which many butchers of extensive trade (though on this point all do not agree) consider indispensable to the transaction of their business. The Post-office, the Bank of England, and Lombard-street, where the chief part of the country banking business is carried on, are within a few minutes' walk of the market, and, from the large ready-money transactions connected with it, the necessity for promptly cashing the checks in which the payments are made, and making the remittances to the grazier, form other grounds upon which the advantages of the present site are maintained. It is alleged by many of the butchers that the retention of the market in a central part of the metropolis is essential to their trade, inasmuch as the necessity of conveying the animals from a distance would enhance the price of meat, and otherwise impede their business.

On the other hand, the position of the market in the centre of a dense population, surrounded by streets, and in the very focus of trade and traffic, constitutes its prominent disadvantage. It is this peculiarity of its position which renders the enlargement of its area expensive and difficult, which confines its approaches, and obstructs its thoroughfares; and produces the various inconveniences inseparable from the periodical congregation of a large number of cattle in the most frequented parts of an immense city.

Within one furlong (220 yards) of the market, subject to all its annoyances, the noise of the dogs, of the cattle, and of their drovers, as well as the filth and disturbance caused by the collection and dispersion of this large number of animals, are placed the hospital of St. Bartholomew, the great gaol of Newgate, the Giltspur-street prison, the Central Criminal Court, the large chartered schools—Christ's hospital, and the Charter-house; within double that distance, St. Paul's cathedral, and the Post-office; a little further, the Bank of England, the Royal Exchange, and the Mansion-house; in short, all those establishments from which it seems important to the public interests and to good order that a large market for cattle should be far removed. Hence the great lines of traffic are travelled and crossed by cattle, and the main thoroughfares of business obstructed. We are informed that on great markets the neighbourhood is blocked up with cattle which have reached to St. Sepulchre's church, situate at the corner of Skinner street, on the great thoroughfare leading from Holborn; and that on the 17th of December last, the cattle were standing in droves in Giltspur-street and on Snow-hill.

The City authorities calculate that in the present market 2,750 bullocks may be placed at the rail and tied, and 1,250 more may be brought into the market by being forced into "ring droves;" and that 30,000 sheep may be penned, averaging about 20 to each pen. It is very questionable, however, how far the room apportioned for this number of tied cattle and sheep would be deemed sufficient in a spacious-market. Moreover, a reference to the returns shows that in 50 out of the 52 Mondays' markets in the year 1848, the cattle in the market greatly exceeded the number for which ties are provided—averaging no less than 3,551 on the Monday's markets in that year. The inadequacy of the space is attested by all the witnesses whom we examined on the subject; by the clerk of the market, by the police officers of the city police in attendance at the market, examined by the committee of 1849; and it is made the foundation of the plan of enlargement proposed by the Markets' Improvement Committee, to which we shall advert presently.

We have already described the approaches to the market; one only of these seven entrances is of the minimum width required by the Building Act; and the available roadway of that one entrance is not wider than 35 feet, when the cattle-standings in the market are occupied; that is, when the means of ingress and egress are most required. It has been stated to us, that in getting the cattle into the market by such approaches, and in tying them and penning them in the narrow spaces allotted, much cruelty is practised; the animals are beaten, and hurried with dogs, until they are forced into their places. The sheep undergo the same treatment; much violence is used in order to drive them down the alleys, and then to thrust them into their pens.

Evidence.

Giblett, 82-3, 1914-6
Bonser, 275-80.
Venables, 392-6.
Prentice, 482-97.
Kentish, 731-7.
Hicks, 872-6.
Duckworth, 985-90.
Banister, 1019-9.
Slater, 1114-7.
Cramp, 1234-8.
Harper, 1444-9.
Cross, 1756-67.

Ho. Comm. Rep. 1849.
Sharp, p. 223.
Jacomb, p. 255.

Evidence.

Banister, 1013, 1014.
Cramp, 1201.
Harper, 1376, 1377.
Giblett, qu. 29-31.
Banister, 1009, 1010.
Slater, 1095-7.
Cramp, 1192-4.
Shank, 1653-65.
Eve, 1993.
Thomas, 2046, 2047.
Taylor, 2209, 2210.
Ho. Comm. Rep., 1849,
pp. 46-63.

Shank.

Ho. Comm. Rep. 1849,
p. 182-196.
Sharry, Ho. Comm.
Report, 1849, p. 97.
Nos. 1707-9.
White, ib., p. 100.
Nos. 1783.

Evidence.

Harper, 1361-5.
Cramp, 1194, 1207.
Giblett, 31-3, 45.
Eve, 2021-26.

The evils arising from the cruelty necessary for forcing so large a body of animals through comparatively few and narrow thoroughfares into so confined a space, are not limited to the suffering inflicted on them. Several competent witnesses expressed to us their opinion that the fatigue and excitement to which the animals are subjected, deteriorate the quality of their flesh, and diminish their value; thus inflicting both a loss on the owner, and causing the purchaser to be supplied with an inferior description of meat.

Upon the deterioration in the flesh of the animals, caused by the treatment which they receive in driving them to Smithfield, and in the market itself, there are many statements of witnesses in the House of Commons Report of 1849; and estimates made of the probable amount of this loss. Similar statements and estimates were given in evidence to us. In both cases, the opinions are those of practical men—but the data upon which they founded their calculations were, in our opinion, necessarily too conjectural to be received with much reliance; we will therefore only refer to them with this remark, that when the large amount of the annual value of the animals brought into the market is considered, a very trifling deterioration per cent. would produce a serious loss.

The evils which are attributable to the site of Smithfield naturally began to make themselves felt when it lost its original character of a suburban market, and became surrounded with buildings and streets.

That these evils were felt by the Corporation is evidenced by their continuous efforts to remedy them. The City Remembrancer has shown that between 1802 and 1835 the Corporation made eleven applications to Parliament for powers to enlarge and improve the market, and they twice in that time endeavoured to obtain the sanction of Parliament to its removal.

The Lords of Her Majesty's Privy Council for Trade, in 1809, refused to grant facilities for its enlargement, distinctly stating to the City Deputation appointed to confer with their Lordships, that the enlargement then proposed "would by no means afford the accommodation required, particularly in a place so much intersected with public streets and ways, through which a very considerable part of the commercial traffic of the metropolis necessarily passed daily, with carts, drays, and other carriages, which occasion a great injury to the cattle in the present market-place, and cannot be prevented by any enlargement thereof," and recommending that it should be placed outside the metropolis. In 1828 the butchers made several representations on the subject of this market. They complained to the Corporation, by a deputation from their trade, of the very great loss and inconvenience they were suffering from want of sufficient room to transact their business, and of the consequent cruelty and deterioration the animals underwent from this cause. In the same year they repudiated, in a public meeting, the charge of cruelty brought against their trade; and resolved, that the enlargement of Smithfield market was absolutely necessary to abate the cruelty complained of by the public. In 1828 a Committee of the House of Commons, after full inquiry, reported their opinion, that the passing of live stock to and from Smithfield is a nuisance to the inhabitants of the neighbourhood, and to the public at large, and that the present size and arrangement of the market does not afford sufficient accommodation for the live-stock therein, offered for sale, and also that the site of a live-stock market in a thickly inhabited part of the metropolis is highly objectionable; and in 1849, another Committee of the House of Commons, upon whose report our Commission originated, came to the same conclusion.

During this time the Corporation have made every effort to improve and enlarge the site, and to provide for cleanliness and good regulation. They have made, since 1833, the following additions, at a cost of not less than 43,000*l.*, for the repayment of which no provision was made:—

	A.	R.	P.	
In the year 1833, the area of this market-place was	4	2	35	
„ 1834,	0	1	10	were added to it.
„ 1836,	0	0	13	„
„ 1837,	0	2	0	„
„ 1839,	0	0	8	„
„ 1847,	0	1	13	„
„ 1849,	0	0	16	„
Making the area at this present time	6	0	15	

Ho. Comm. Rep. 1849.
Watson, 1362.
Langham, 1418.
Evans, 2143.
Loft, 2585.
Burness, 2905-31.

Evidence.
Harper, 1469.
Eve, 1995-6.
Frazer, 1599.

Ho. Comm. Rep., 1828,
p. 394.

Ho. Comm. Rep. 1847,
p. 382.

Ho. Comm. Rep., 1828,
p. 396-8.

But these enlargements, though made at such considerable expense to the Corporation, have barely kept pace with the increase of the market, and though they have mitigated, they have not effectually removed the mischiefs inherent in the situation of a market of this magnitude in the midst of a dense population, now amounting to nearly 2,000,000.

We have not adverted to the want of lairage close to the market. This is a serious defect, and the cause of much additional deterioration and loss, for which the present locality of the market affords no means of providing an adequate remedy. Experience has shown that after the fatigue and injury which the animals have undergone in the market, they do not feed, are subject to rapid waste, and rarely recover their appearance. In a depressed market, therefore, the sale is forced, the salesman considering the state of the animals, and the distance of the lairs to which they must be removed, if unsold, seldom thinks it prudent to risk the effect of such deterioration in a second market, and the stock is sold beneath its real value.

Evidence,
Harper, 1371.
Fraser, 1597.

Neither the evidence taken by the Committees of 1847 and 1849, nor that which we have ourselves received, leads us to think that the appropriation of the area of Smithfield to the uses of a market for live stock on two days of the week is productive of insalubrity to the neighbourhood to any appreciable extent. We can, however, hardly doubt that it collects into its vicinity various establishments of a character more or less unwholesome, such as slaughter-houses, tripe-dressers, &c. We believe, moreover, that the immediate neighbourhood of such a market can scarcely fail to be inhabited by a class of persons whose habits and mode of living are unfavourable to cleanliness and order; and, therefore, engender insalubrious influences.

Evidence.
Hutchinson, 1818—
1829.

Having described Smithfield market, and the various effects which it produces, we proceed next to an account of the markets in the City for the sale of meat.

NEWGATE MARKET.

THE site of Newgate Market belongs to the Dean and Chapter of St. Paul's, and has been held by the Corporation of the City since 1670, on a lease of forty years, renewable for ever, at a rent of 4*l.* per annum, with a fine of one year's rent on each renewal; but the market has now extended greatly beyond the ground held on this tenure. It is held daily for the sale of dead meat and poultry; the green market which was formerly held here has been removed to Farringdon market. Business commences at 4 o'clock in the morning on Saturdays and Mondays, and at 5 o'clock on the other four days. The wholesale trade is usually over between one and two o'clock p.m.; but there is no fixed hour for closing the market, and some sales continue during the day, and to a late hour on Saturday night.

The business of the market is essentially confined to the wholesale trade in dead meat, principally country killed, which is consigned to the salesmen who are the agents for the country carcass butchers, and others. Their commission is calculated at per stone on beef, and per head on sheep and pork, and the produce of the sale, deducting this commission, is remitted to the consigner. Sometimes live meat is consigned to the salesman, to slaughter and sell. Some of the salesmen are also carcass butchers, that is to say, they buy and sell meat wholesale on their own account.

The Corporation are entitled to a toll of 1*d.* for every hamper, 2*d.* for every bundle, and 6*d.* for every pack of meat brought into the market, with 1*d.* for every hamper or coop of poultry, and the same for every flat of butter or eggs; but these tolls have been commuted for a fixed weekly payment, which is received from those who are tenants in the original market. The tenants on the other portions of the market not leased to the Corporation have contested their liability to pay tolls, and the question has now stood over for some years—the claim never having been brought to a legal issue. We were furnished by the Markets' Improvement Committee, with the following account of the revenue and expenditure of the market for the year ending the 31st of December, 1848, which shows a net income of above 3,000*l.* per annum.

Evidence.
Bonser, 231—37.
Venables, 407—9.

REVENUE.				EXPENDITURE.			
	£.	s.	d.		£.	s.	d.
To gross produce of the rents and tolls of the market	4,580	5	1	By rates, taxes, &c.	345	1	8
Deduct wages and petty expenses	167	17	8	By allowance to collector	180	18	10
				By expenses of works and repairs	751	11	6
				By ditto of lighting	100	4	0
				Total	1,377	16	0
				Balance, being the excess of revenue over expenditure	3,034	11	5
Total	£4,412	7	5	Total	£4,412	7	5

Evidence.
Pocklington, 573.
Kentish, 619—24.

The market is under the management of the Markets Committee. The officers are a collector and a beadle; the duty of the collector is to receive weekly the tolls and rents, and to account for them to the City Chamberlain; he also acts by the appointment of the Lord Mayor, as inspector, having power to condemn unwholesome meat. The beadle is appointed by the Markets Committee to prevent disorders and obstructions in the market.

Evidence.
Moseley, 1871—75.
Hayward, 1290.

The course of our inquiry brought the importance of this market and the extent of its supplies strongly under our notice. There are no means of ascertaining with accuracy the quantity of meat sold, but we received evidence that the Eastern Counties Company's railway alone is now carrying 600 tons of dead meat weekly, the great bulk of which is consigned to this market; and that in one week during the last Christmas that Company pitched here about 1,000 tons of dead meat, poultry, and game; also, that Messrs. Pickford delivered in the last four months of last year, on an average, 18½ tons of dead meat daily, conveyed by the North Western Railway Company; and from Messrs. Chaplin and Horne's letter to us, their deliveries of meat at this market may be calculated at 10 tons daily. The average deliveries of these three principal carriers may now, therefore, be taken to amount to 800 tons weekly. To this must be added the supplies brought into the market by other carriers, which we have no means of estimating, and the supplies derived from Smithfield. Mr. Giblett, whose estimate we have quoted in reference to Smithfield market, made the following calculation of the value of the meat sold in Newgate market:—

Evidence.
Kentish, 648.
Willoughby, 1317.
Chippingdale, 1333-34.

Estimate of the number and value of stock slaughtered by carcass-butchers in London, expressly to supply Newgate market. In winter less; in summer more:—

	Average, say Weekly.				Annually.
Beasts	1,000	at	£12	0 per head	£12,000
Sheep and lambs	3,000	„	1	15 „	5,250
Calves	200	„	4	0 „	800
Pigs	200	„	2	0 „	400
					<hr/>
					£18,450 = 959,400

Evidence.
Giblett, 1906.

Estimate of the value of meat consigned from the country to be sold at Newgate market annually, taken at three times the amount of that killed by the carcass-butchers, as above

2,878,200

£3,837,600

We are induced to believe that this estimate is under the true value. The deliveries of the three principal carriers alone, which we have ascertained with tolerable accuracy, will amount in value to 1,165,116*l.* in the year, calculating the price at 2*s.* 10*d.* per stone. But adding to the value of the country-killed meat, as above estimated by Mr. Giblett, the estimate which we have made of the value of the live stock sold in Smithfield, we find that the meat supplies from these two markets will amount to no less than 9,477,177*l.* yearly.

We should mention here that the supply of dead meat varies according to the season of the year, and that, during the hot months, the trade in dead meat falls off to a great extent, and a simultaneous increase takes place in the sales in Smithfield.

Evidence.
Hicks, 821.
Bonser, 186.
Giblett, 77, 81, 1912.

Newgate market affords a peculiar advantage over the live-stock market for the disposal of the parts of a carcass in the most advantageous markets. This is particularly the case with respect to mutton; and we are informed that the prime parts alone are now frequently sent to London,—as the hind-quarters, legs and

saddles—and that a better price is obtained for the other parts in other markets. The same practice prevails, but not to the same extent, with respect to beef. Newgate market also provides a ready means of sale for the inferior parts of the animals slaughtered by the butchers of the west end of the metropolis.

Since the introduction of steam-carriage, the increase of the dead-meat supply has been most rapid. We have evidence of this in several collateral facts. Forty years ago there were only thirteen principal salesmen in the market, there are now 200; and it is stated that within the last ten years the sales have more than doubled, and the amount of country-killed meat quadrupled. We have every reason to believe that the supplies to this market will continue to increase. We are informed by men of experience in the dead-meat trade that farmers and graziers will be induced, by the facilities of transport, to make themselves acquainted with the best modes of slaughtering and packing, and will consign their supplies directly to the market.

It has been shown in the preceding part of our Report that the number of sheep sold in Smithfield was not greater in 1848 than in 1828, while in the same period the number of cattle sold increased from 155,714 to 236,975. Had the sheep increased in the same proportion the numbers sold in 1848 would have been 2,148,912, or 731,902 more than the actual numbers sold in that year. The connexion between Smithfield market and Newgate market will appear in many points of the evidence which we append to our Report. It is strongly marked by the effect of season. It is dependent upon prices, and upon the peculiar means which each market may alternately have for supplying the particular wants of the trade; and further, by the simultaneous large increase of one market to which modern improvements have rendered it more profitable to send mutton in the carcass, or in portions of the carcass, and the decline of the other, as evidenced by the diminished proportion of sheep in Smithfield.

Steam conveyance has increased the supply of dead meat, by extending, almost without limit, the districts from which it may be brought. Formerly Newgate market drew its chief supplies from places in Surrey, Berks, Oxford, Hants, and Wilts, within 100 miles of the metropolis; now those places have to compete with the supplies brought to Newgate market from the ends of the kingdom—from Suffolk, Norfolk, Lincoln, York, Northumberland, Durham, Bristol, Liverpool, Berwick, Aberdeen, Edinburgh, Fife, and from Holland, Hamburgh, and Breinen; and carcass-butchers have established themselves in Hull, Leeds, Durham, Newcastle, and in Edinburgh, for the supply of this great market.

These supplies are partly brought by the steam packets—but the great proportion is now carried by railway, ensuring greater certainty of arrival. The Eastern Counties Railway Company are, up to this time, the greatest carriers, and they provide hampers or peds, and cloths for packing the meat, for which they make a moderate charge. From Scotland, some part of the meat is sent packed in boxes, but usually in hampers; from Yorkshire, generally in sacks made to fit each carcass of mutton. From the Railway termini it is conveyed and pitched in the market, on the Eastern line, by the Company's own waggons, and on the other lines, by Messrs. Chaplin and Horne, and Messrs. Pickford, the extensive carriers.

The extensive trade connected with this large supply is carried on in a market of confined area and bad—almost impracticable—approach, situate between Newgate-street and Paternoster-row, in the midst of the narrow courts which intersect that neighbourhood. Its area is 2 r. 45 p. It has one foot-entrance from Newgate-street, at it widest part, 16 ft. 6 in., and three other foot-entrances from the adjoining courts, varying in width from 5 ft. 8 in. to 10 ft. The only carriage-entrance is by Warwick-lane, a thoroughfare varying from 14 ft. to 18 ft. 3 in. wide, and turning at a right angle into the market, by a road 17 ft. 6 in. wide—in which two carts cannot pass each other. Into this confined market, by such approaches, a supply of the magnitude we have described has to be brought in time to meet the demands of the market, while, at the same time, all the accessible channels of the market are crowded by the numerous purchasers and their vehicles.

The City deputation stated, that they are quite satisfied of the great want of accommodation in this market, and of the insufficiency of the space for the purpose of the market. Every witness whom we examined on the subject concurred in the extreme inadequacy of the market for the proper exposure and sale of the large and increasing supplies consigned to it; and the great inconvenience which is suffered

Evidence.
Bousser, 196, 231, 244.
Venables, 385, 373.
Prentice, 447, 470-2.
Hicks, 805—6.
Hayward, 1287.

Evidence.
Hicks, 795, 810—820.
Giblett, 1912.

Evidence.
Hicks, 793—5.
Prentice, 439—42.
Giblett, 91.
Venables, 385.

Evidence.
Mosley, 1817.
Giblett, 96.

Evidence.
Taylor, 2217.
Prentice, 449—461.
Venables, 340—355.
Hayward, 1289—95.
Bousser, 195—0.

both by the salesman and the buyer. It is stated to us that the narrow thoroughfares are so impeded by the large hampers of meat which there is no room to unpack or remove, and so crowded by purchasers, that the salesmen have a difficulty in reaching their premises, and frequently in getting from one shop to another; that the expense of carriage is increased by the want of space and means of approach, and that packages of great weight are frequently, from this cause, discharged at a distance from the market; and more than one salesman expressed to us his surprise that it was possible, by any means, to transact the business of the market. With the increase of business the market has extended into the surrounding property. Salesmen have taken shops, where they could, in the adjacent courts and alleys, and any premises in the immediate neighbourhood which are attainable are eagerly sought after.

Evidence.
Bosser, 209—19.
Venables, 357.
Prestice, 466—7.

From this state of things great losses have arisen. Large quantities of meat are damaged and spoilt, from the impossibility of unpacking it, and hanging it up, so that it may be both exposed for sale and to proper ventilation.

LEADENHALL MARKET.

Evidence, p. 88.
Mr. I. Cross.

This market is close to Leadenhall-street, from which it has good access. It is also approachable for carts by Lime-street, and has foot-thoroughfares through it in two directions.

It is the chief London market for poultry, and has a wholesale dead-meat trade, and general retail trade for provisions. The market is held daily; but the chief days for the sale of meat are Tuesday, Thursday, and Saturday. On Mondays and Fridays there is a hide and leather market.

The greater portion of the market is of modern construction, and the stalls and shops have dwellings over them. The poultry-market, with some portions of the meat market, form the older parts of the market, and are confined and ill ventilated; but the market generally appears adapted to the amount of business, which is on the decline, and is said to have diminished one-half within the last twenty years.

The supply of meat, which is chiefly from the eastern counties, averages from 700 to 1,000 sheep and 100 beasts weekly; about two-thirds of which are killed in inconvenient cellars and slaughter-houses in the market. The market is attended by about twenty meat and twelve poultry salesmen.

The City levies a small toll, which, with the rents, produces an income of about 2,500*l.* per annum. The expenses are about 1,500*l.*, leaving a net revenue of 1,000*l.* per annum.

FARRINGDON MARKET.

This market now forms part of the west side of the broad street of the same name, which leads directly north from the end of New Bridge-street, Blackfriars-bridge. The market was built under the Act of the 5 Geo. IV, c. 151, which empowered the City Corporation to remove the ancient Fleet Market, for which this was substituted, and vested the new market in the Corporation, continuing to them the accustomed tolls, rents, and profits of the old market.

The approaches and entrances are good. The market-place, intended for a general retail provision market, is built on three levels, and is spacious, well-constructed, and convenient, but it is almost tenantless. Of between eighty and ninety retail butchers who removed from the old market, three only now remain. The shops in the upper avenue are, with these three exceptions, entirely closed, and the other two avenues are more than half untenanted, and impeded with lumber. Except in the large open centre space where the green market is held, the market is abandoned; the trade has found other channels, and this valuable property lies nearly unproductive.

The tolls are levied upon yearly and casual standings; but the income arising from them, and the rent of the shops (which does not amount to 1,000*l.* per annum) barely covers the expenses of the market, without providing for the interest of the large sums borrowed for its erection.

From the preceding statement, it will be seen that the chief and almost exclusive supplies of dead meat are confined to Newgate market, and that Newgate

market now stands in the same relation to the metropolis as the principal dead-meat market which Smithfield does as the live-meat market.

Having given this description of the existing state of Smithfield market, and of the markets for the sale of meat within the City, and having pointed out their respective advantages and disadvantages, we proceed to examine the practical questions more immediately proposed for our consideration.

Our Commission requires us to report our opinion whether any and what means can be properly and beneficially adopted for carrying into effect the recommendations of the House of Commons Committee of 1849. The principal resolution of that Committee was that the market for the sale of live stock in Smithfield ought to be removed from that site. We will therefore begin by inquiring whether it is expedient that this resolution should be carried into effect; and if so, what are the proper means for the purpose

We have already stated that the Markets Improvement Committee of the Corporation of London, in considering the means of improving Smithfield, came to the conclusion that the present accommodation of the market, both as to its thoroughfares and its area, is insufficient. We may add that they came to the same conclusion with respect to Newgate market. They propose to remedy the inadequacy of the two markets by a plan involving extensive changes, which they communicated to us; and as to which they explained their views, both orally and in writing, without any reserve, and in the fullest detail. Everything necessary for the complete explanation of this plan will be found in the report of our conference with the deputation of the Markets Improvement Committee, as well as in the written documents communicated to us by the same body, all of which are inserted in the Appendix.

Evidence, 2209, 2210.

Evidence, 2217.

The following are the principal outlines of the plan. It is proposed to retain only one acre of the existing site of Smithfield, and to form a new market, both for the sale of live stock and of meat, together with space for lairs for the cattle, by clearing an area of $11\frac{1}{2}$ acres lying to the west of the present market, and extending on its boundary line from Smithfield-bars, in a north-west direction, through Greenhill's-rents to near Cow Cross-street, and in a line with that street westward till it intersects the new street in continuation of Farringdon-street, along which it runs southward to Field-lane, near Holborn, returning from this point eastward to the King-street entrance of the present market, of which it takes in the western corner.

See plans. Appendix.

In addition to this area there would be a certain space appropriated to slaughter-houses. The projected market would provide room for tying 5,000 cattle, and also for 36,000 sheep, 500 calves, and 1,000 pigs. The approaches and thoroughfares would be far more spacious and commodious than those leading to the existing market, and there would be lairage for 1,000 bullocks and 5,000 sheep.

In order to effect this great improvement and enlargement of the existing markets, the Markets Improvement Committee propose that the City should make a considerable pecuniary sacrifice, and that additional charges in the shape of tolls should be levied on the animals sold. The excess of revenue over expenditure for Smithfield market in the year ending 31st December, 1848, was 4,641*l.* 9*s.* 10*d.*; the similar excess for Newgate market was 3,034*l.* 11*s.* 5*d.*, making together a clear income of 7,676*l.* 1*s.* 3*d.* which the Corporation of London received in that year from these two markets. The gross revenue derived from Smithfield market in the same year was 8,022*l.* 9*s.* 10*d.* The Markets Improvement Committee estimate that this amount would be increased by changes in the rates of toll to 20,627*l.* 13*s.* 4*d.* per annum. It is proposed that the whole of this sum, together with the whole of the improved rents to be derived from the new meat market, should be appropriated to defraying the expenses of the new market. These expenses are estimated as follows:—

Evidence, 2268, 2271.

Live-cattle market, to be provided for by a loan extinguishable	£
by annual payments in thirty years	245,000
Dead-meat market and buildings, to be provided for by the rent	
of the houses and the charge for shops, stallage, tolls, &c.	177,000
Slaughter-houses	45,000
	<hr/>
Total proposed expenditure	£467,000
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Connected with this improvement is the plan of a new communication from Long-lane to Holborn, at an additional cost of 60,000*l*. This suggestion, however, is only incidental to the improvements of the market.

It is further proposed that the area of Smithfield market, which, according to this plan would be abandoned, consisting of five acres, should be appropriated for the erection of baths and wash-houses and for the accommodation of the hay market, leaving an open space opposite St. Bartholomew's hospital and next the entrance from Long-lane. It is also proposed to provide model lodging houses adjoining for the accommodation of those who would be displaced by the alteration.

The plan which we have described has been conceived in a liberal and comprehensive spirit, and it has been prepared with a sincere view of removing all the evils in Smithfield market which are not inseparable from a situation within the City. It appears also to us, so far as we are competent judges upon such a matter, to be framed with much practical skill and ingenuity in its arrangements. It proposes entirely to change the site of Newgate market, and also, with the exception of one acre, to change the site of Smithfield market; substantially, therefore, it provides two new markets. The joint area of the two existing markets is 6a. 3r. 0p. The area of the proposed market, including both the live-stock and the meat market, as well as a provision for lairage, is 12½a. In addition to this, the plan contemplates the erection of public slaughter-houses on an adjoining site. The entire outlay for these purposes would amount to 467,000*l*., and the City would be required to appropriate 8,022*l*. 9s. 10d. of their net revenue, besides raising an additional sum by tolls.

There is no doubt that the plan which the Markets Improvement Committee have, deliberately, and after a careful consideration of all the circumstances of the case, proposed, would effect a great improvement, as compared with the existing market, and that if the changes which they recommend were adopted, a decided amelioration in the approaches to both markets, in the accommodation for the sale both of the animals and the dead meat, and in the general facilities for traffic would be effected. Accordingly, if the only alternatives which presented themselves to us were the retention of the markets in their present sites, and the adoption of the plan recommended by the Markets Improvement Committee, we should not hesitate to advise the choice of the latter. Agreeing, however, with the Markets Improvement Committee in their conclusion, that the existing sites of both markets are quite inadequate, we think that a third alternative requires our consideration, namely, the expediency of disengaging the market for live stock from the neighbourhood of the thickly inhabited parts of the metropolis, and of removing it to a situation in the suburbs.

Proceeding, therefore, from the assumption that the existing site is to be abandoned, the practical question which we now have to consider is, whether the plan recommended by the Markets Improvement Committee shall be adopted, or whether the market for live stock shall be removed to some convenient site in the outskirts of the metropolis?

We have considered the plan proposed on behalf of the City with every disposition to view it in a favourable light, and we should not hesitate to recommend it for adoption if we could have satisfied ourselves that such a course was consistent with the public interests; but after having examined it with the utmost care, and weighed it in all its bearings, we have come to the conclusion that it is subject to insurmountable objections. These objections may be briefly summed up under the heads of—

1. The situation of the projected market.
2. Its estimated expense.
3. Its want of capacity for future enlargement.

Upon each of these heads we will make a few observations:—

1st. Although the proposed plan multiplies and widens the approaches to the cattle-market and enlarges its area, it does not provide a space which appears to us really adequate for its purpose. It will be considerably larger than the existing market, but still, in our opinion, not sufficiently large; moreover, the standing place for the calves and pigs will be upon a terrace forming the roofs of the lairs; while the lairs themselves would, on account of the difference of level, probably be imperfectly lighted and ventilated. The latter arrangements,

though indicating ingenuity and practical resource on the part of the architect, prove that in framing this portion of his plan he was cramped by want of space.

The provision for lairage, though in itself very desirable, would produce the effect of keeping a large number of cattle and sheep (amounting, if the lairs were fully occupied, to 1,000 cattle and 5,000 sheep) stalled close to the crowded thoroughfares of the City and the adjoining habitations. The provision for slaughter-houses would likewise fix the permanent and most considerable establishments for slaughtering in a similar situation; and it is to be observed that the City Sewers Act looks with so little favour upon new slaughter-houses within the precincts of the City, that it absolutely prohibits the use of any place as a slaughter-house which was not used as such before the passing of the Act (11 and 12 Vict. c. 168, sec. 94).

The objections stated above to the existing Smithfield market, so far as they relate to its central position, would equally apply to the proposed market. No improvements in the internal disposition of the market could, in our opinion, obviate the fundamental objection inseparable from its situation in the heart of the City, within a quarter of a mile of St. Paul's, and close to some of the main street communications of the metropolis.

2ndly. If the expense estimated for the new market were necessary for accomplishing the object, it might be justified by the great public convenience which it would produce. A large portion, however, of the expense which it is proposed to incur arises exclusively from the great value of the land intended for the site. In order to obtain the additional area of more than eleven acres, it would be necessary to clear away a large mass of buildings; and although the houses which it is proposed to demolish are, generally, of a mean description, yet the ground upon which they stand must be purchased at a high price. We fully appreciate the liberality which has induced a public body, acting on behalf of the Corporation, to propose a plan involving so large a sacrifice of the revenue of the City; but it is our duty, in estimating this plan, and in comparing it with other more economical modes of attaining the same end, to look upon the Corporation as trustees for their fellow-citizens, and not to concur in advising any expenditure of the City revenues which appears to us unnecessary.

3rd. The cattle-market of Smithfield has, as we have already stated, existed from a time reaching beyond the records of the Corporation. It is proposed to form a new market adjoining the present site, both for live stock and dead meat, with a provision for lairage and slaughter-houses. The cost of this new market is estimated at 467,000*l.*; and the buildings connected with it (of which a finished model prepared by the architect has been exhibited to us) seem to be planned with solidity, and calculated for a long duration. Looking to the magnitude and character of the constructions, and the amount of the proposed expenditure, we think that the market must be intended to last for several generations, and to remain in use for at least a century. The loan which would be contracted for the original outlay would not be repaid for thirty years (nearly one-third of a century). Now in adopting a plan thus calculated for permanence, we must look not only to the present, but to the future wants of the metropolis. In the year 1725, the total number of cattle sold in a year in Smithfield was, as we have seen, 73,691; and of sheep, 555,620. In 1828, about a century afterwards, the number of cattle sold in Smithfield was 155,714, and of sheep and lambs, 1,412,030. In 1849, the numbers had risen to cattle, 236,975; sheep, 1,417,010.

There are no records which would enable us to place side by side with these statements of increasing supply, or to estimate with any due approach to accuracy the concurrent increase of the population. But we quote from the commencement of the decennial census, the actual growth of the population of the metropolis, including the Cities of London and Westminster, the Borough of Southwark, with the remaining parishes within the bills of mortality, and the other large parishes which now form the immediate suburbs of the town, and we have added the present probable amount of that population:—

1801	.	.	864,845
1811	.	.	1,009,546
1821	.	.	1,225,694
1831	.	.	1,471,941
1841	.	.	1,690,084
1850	.	.	1,886,413

Assuming that the population of London will continue to increase during the next century at a rate not altogether dissimilar to that at which it has increased during the last 50 years, and also assuming that the consumption of live animals will continue to bear a similar proportion to the population, it follows that successive enlargements of the great cattle-market of the metropolis will become necessary, as, indeed, they have already been found necessary in the case of Smithfield. Now the plan which is proposed offers no facilities for such enlargements, and they could only be made at great cost and by the demolition of buildings. If it should be said that the necessity of enlarging the market might be obviated by establishing subsidiary markets elsewhere, it may be answered, that the constant tenor of the evidence points to the superior convenience of one central cattle-market, and that, therefore, it would be an improvident arrangement to establish, at a great expense, a market which affords no facilities for enlargement.

Looking to the reasons which we have just stated, we are of opinion that it would be advisable to remove the market for live stock from its present site—not to some other site immediately adjoining—but to a site detached from the central portion of the metropolis. We believe, from evidence which we have received, that several eligible sites for such a market may be found on the northern suburb of the town. We abstain from indicating any particular site; but we will briefly enumerate the conditions which, in our judgment, it ought to fulfil. We think that its area, including all the adjuncts for which it may be expedient that provision should be made, ought to be such as would afford room for a live-stock market; for an adequate provision for lairage; for slaughter-houses accessible to the public; and for stalls in which dead meat may be conveniently sold. It should also be so situated as to be approachable by the principal lines of railway; and the character of its neighbourhood ought to be such as to afford facilities for successive enlargements.

If this transfer were made, we would recommend that the cost of providing a site for such market, of making the necessary constructions, and of maintaining the whole in repair, be defrayed by the Corporation of London. That for this purpose the tolls of the market be levied by the Corporation on their own account, and that they be empowered to borrow the sums of money necessary for effecting these purposes. We think likewise that the government of the market should be vested in the Corporation.

In order to make the changes which we have thus recommended, new legislation would be requisite; and we assume that the legislative measure for carrying them into effect would, if our suggestions should be adopted, be prepared under the superintendence of the Executive Government.

With respect to Newgate market, we concur with the Markets Improvement Committee in considering it inadequate for its purpose, and we approve of their proposal for abandoning its present site. We likewise suggest, that in case it should be determined to retain wholesale markets for dead meat within the City, a new market for the sale of meat be provided by the Corporation, either on a part of the site of Smithfield market, or in some other convenient place within the limits of the City.

We have already stated that, in our opinion, provision should be made for annexing to the cattle-market a certain number of slaughter-houses accessible to the public. This recommendation renders it necessary that we should add a few remarks upon the existing practice respecting the slaughtering of cattle and sheep in the metropolis, and the law relating to the subject.

The general law of the country imposes no restriction with regard to opening or using a slaughter-house, provided that the occupier of the premises does not render himself liable to be indicted under the law of nuisance. In the whole of the metropolis, therefore, except the City, (to which, as we shall see presently, special enactments apply,) the slaughtering of cattle may be carried on in any building without legal impediment. It appears that the majority of butchers in the metropolis slaughter cattle or sheep, or both, in private slaughter-houses adjacent to their shops.

The City of London Sewers Act (11 and 12 Vic. cap. 168, passed in the year 1848) introduces special regulations for slaughter-houses in the City. It directs that all places used as slaughter-houses at the time of the passing of the Act shall be registered, and it empowers the Commissioners of Sewers to make rules for the cleanliness and better management of every place then used as a slaughter-house.

It further directs that if any occupier of a slaughter-house kills any beast contrary to the Act or the regulations of the Commissioners, a justice may suspend the slaughtering in his house for two months for the first offence, and prohibit it absolutely for the second offence. With a view, apparently, of diminishing the number of slaughter-houses, it enacts that no place shall be used as a slaughter-house which was not so used at the passing of the Act. (Ss. 92-96) Slaughter-houses in the City are likewise subject to an inspection for the purpose of ascertaining that the regulations of the Commissioners are observed. The evidence of Mr. Daw, the principal clerk of the City Sewers Commissioners, and of two inspectors who visit slaughter-houses, will be found in the Appendix, and furnishes information as to the manner in which these provisions have been carried into effect.

Evidence.
Daw, p. 82.
Ternouth and Santler,
p. 108.

It appears to us that the provision which prevents the opening of new slaughter-houses, though it may be advantageous in the limited district of the City, is unsuited to the entire metropolis. It would not provide for the gradual extinction of slaughter-houses, but would merely perpetuate those which already exist, and, by giving them a monopoly, would confer upon them an artificial value. Questions also might arise with respect to the legality of enlarging an existing slaughter-house, and if such an enlargement were not prohibited, there would be a ready mode of evading the prohibition. It appears to us desirable that private slaughter-houses should be subject to a licence granted by the magistrates, and to be annually renewed. Under such a law, slaughter-houses ill-managed, or situated in such manner as to be inconvenient to the neighbourhood, would be gradually suppressed. It has likewise been stated to us by several experienced witnesses, that the slaughtering of animals in cellars or other subterranean places ought to be prohibited, in which opinion we concur.

Evidence.
Bousser, 303-5.
Hicks, 904.
Cramp, 1227.
Harper, 1475.
Daw, 1680-5.
Simon, 1941-5.

If the plan for forming a new cattle-market recommended by us should be adopted, a power of making regulations and bye-laws for the government of the market would be vested in the Corporation of London. In exercising this power they would have to consider on what days of the week, and on what hours of those days, the market could most conveniently be held. At present the principal market is held at a very early hour on Monday morning, which necessitates the driving of the cattle and sheep from their lairs in the suburbs to Smithfield during the night of Sunday. Moreover, although there is another market held on Friday, the attendance on that day is inconsiderable. If the site of the market should be changed, a different arrangement of the times for holding the market ought to be adopted for obviating these inconveniences.

If the new market were situated on the outskirts of the town, with a convenient access to the principal railways, the live stock would reach it without material inconvenience to the public. But in order that they should be distributed from the market among the different private slaughter-houses throughout the town, it would be necessary that they should be driven through the streets. On this subject the Markets Improvement Committee propose the following regulations, with respect to their projected market:—

Appendix, p. 140.

“With regard to the inconvenience sustained by driving cattle through the streets from the market, it will be obviated by closing the gates of the market at an early hour, and by regulations to promote the early departure of the cattle, and to prevent their quitting the market after 10 o'clock in the morning until the evening, as well as by providing well-regulated and well-ventilated slaughter-houses contiguous to the live and dead-meat market, and so placed as to be subject to easy regulation and supervision.”

We concur with the Markets Improvement Committee, in thinking that restrictions upon driving animals through the streets within certain hours of the day should be imposed by a general enactment; but the detailed regulations for this purpose would depend upon the other regulations of the market, and, therefore, refer to many circumstances which it is impossible for us to anticipate.

In concluding our Report, we think it right to state that, although we believe our recommendation for the removal of the Smithfield cattle market to be imperatively demanded by considerations of public convenience, we are not unmindful of the loss of custom which this measure would entail upon certain classes of retail dealers resident in the neighbourhood. It is with sincere regret that we recommend any change which would be attended even with partial and temporary loss of trade to certain individuals; but such local diminutions of mercantile profit are the necessary, though undesigned, consequences of all extensive improvements, which alter existing traffic and communication. We will add, that the removal

of the cattle-market from Smithfield is, in our judgment, likely, upon the whole, ultimately, to enhance rather than lower the value of property in that part of the City, inasmuch as its existence in that position operates as a discouragement to the residence of persons whose business is not immediately connected with the market and its frequenters.

All which we humbly certify to Your Majesty.

(Signed)

GEORGE CORNEWALL LEWIS, (L.S.)

HARRY VERNEY, (L.S.)

WILLIAM MILES, (L.S.)

RICHARD OWEN, (L.S.)

FREDERICK BYNG, (L.S.)

Whitehall, 24 May 1850.

We, the undersigned, being two of the Commissioners appointed by Her Most Gracious Majesty to make inquiries relating to Smithfield Market, and the markets in the City of London for the sale of meat, having carefully and anxiously weighed the evidence submitted, and considered the statements, documents, plans, and model laid before us, with an earnest desire to concur in the Report of our colleagues, while we cheerfully admit that the statements in that document are ably set forth, and with the full intention of doing so impartially, we feel compelled to dissent from the principal conclusion arrived at by them, and from the recommendation founded thereon, involving the removal of the live-meat market for the metropolis, from its present central position to the suburbs of London.

We at the same time feel it necessary very briefly to state the grounds for the opinion at which we have arrived.

The question of the removal of Smithfield Market having been debated for several years past by various parties, we may fairly assume that in the course of the different inquiries all the grounds for its removal have been ascertained and stated, and are to be found in the Minutes of Evidence, as well as in the several Petitions and Reports from time to time presented to Parliament, and upon which the Select Committee of the House of Commons, in the year 1849, doubtless founded their recommendation for the removal of the market.

The resolutions of that Committee refer in general terms to the "inconveniences and objections" attendant on the continuance of the market in Smithfield; but they add "those inconveniences and objections have been of late years in some degree mitigated by care and attention," as far, therefore, as that mitigation extended, the "inconveniences and objections" cannot be attributed to locality, but to the want of care and attention; and, it is also clear, that by care and attention some of the evils have been mitigated, which affords fair ground for assuming that the evils remaining may be still further mitigated if not wholly removed by an extended application of the same means.

The question, therefore, appears to be whether these inconveniences and objections having been partially mitigated can or cannot be altogether obviated.

The Committee of 1849, further express an opinion, that in providing market accommodation for the sale of cattle in substitution for Smithfield Market, due care should be taken to insure space not only for the present, but also for the future wants of the metropolis. The Committee also state their opinion that "there has been great benefit to the health of the neighbouring inhabitants from the presence of a large open space, such as Smithfield, in the midst of a densely populated district," which would be proportionably increased by the extension of that space.

They further state that there should be only one "Great Metropolitan Cattle Market;" and that, "in the selection of its site, regard should be had to the position of the Railway Termini—the place of disembarkation for Scotch, Irish, and foreign cattle—and the bridges, especially Blackfriars;"—

they allude to "the immense importance of the supply of animal food to this "vast metropolis," and to the "variety and magnitude of the interests involved "in the satisfactory settlement of this question," all which observations, in our humble judgment, should be kept constantly in mind, and we could not, in the face of such recommendations, concur in advising Her Majesty, in a matter so momentous, to adopt a measure necessarily attended with much uncertainty as to its effects; although we should be prepared to apply every safe and practical remedy for any evil which is real and can be defined.

We shall confine ourselves, then, as briefly as possible to the consideration—

1st. Of the alleged "inconveniences and objections of Smithfield Market," and

2nd. The proper remedy.

The principal inconveniences and objections which have not been altogether prevented are, the cruelty to the animals not tied up, but driven into "Ring-droves,"—the crowding of the sheep,—the interruption to the thoroughfares through the market, on the one hand, and the diminution of the available area for the use of the market by those thoroughfares, and the footways, on the other—together with the separation of the different parts of the market, and their inconvenient arrangement.

The whole of these objections resolve themselves into the want of proper and convenient space.

Various witnesses examined, have differed widely as to the extent of additional accommodation actually required. One witness of great experience has fixed it at one acre; others have thought that the existing space ought to be doubled, for the purpose of meeting the enormous demand for standing room on one day in the year, the market-day before Christmas, commonly called the "Great day;" and likewise, to provide reasonably for any increased demand which may grow out of increasing population.

The other inconveniences and objections are those which are stated to result from the cattle being driven to and from the market, through the streets and avenues of the metropolis—an evil increased by the late hour to which the market is, by Act of Parliament, now required to be kept open.

The first inconvenience (or rather class of inconveniences) would be obviated by an enlargement of the site of the market amply adequate to its requirements; such an enlargement as has been proposed by the Markets Improvement Committee of the Corporation.

The second inconvenience, with the sanction of the legislature, may be easily obviated by a regulation of the hours for sheep and cattle arriving at and departing from the market,—by widening the avenues,—and by removing the market from those thoroughfares which now convey across its area the general public traffic.

This being the case, the existing inconveniences of the market do not seem to us to justify a course so extreme and problematical, as its removal to a distance:—accompanied as that must be by a great and expensive disarrangement and dislocation of extensive commercial interests connected directly or indirectly with the existing market. Such an experiment would also be likely to affect the regular, certain, and cheap supply of animal food,—a question of vital importance to a population of two millions of persons. We therefore do not feel ourselves justified in resorting to so extreme an experiment, unless it can be shown that all other means of remedying the remaining alleged inconveniences and objections would be ineffectual or impracticable.

It has been objected that St. Bartholomew's Hospital, the Gaol of Newgate, Giltspur Street Prison, the Central Criminal Court, Christ's Hospital, and the Charter House, are within a short distance of Smithfield Market; no complaints however have reached us from any one of these establishments.

The alleged deterioration of the cattle in Smithfield appears to be founded upon data too conjectural to be relied upon; so far as any such deterioration may arise from over-crowding, it will necessarily be obviated by the enlargement of the site. We may be allowed also to observe, that no such alleged deterioration of meat sold in London is consistent with the fact, so well known, both as regards the provinces and foreign towns, that London holds a character pre-eminent as to the superiority of its butchers' meat.

With regard to the effect of Smithfield on the health of the inhabitants of

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the immediate neighbourhood, it does not in fact appear, either from the evidence taken on former occasions, or laid before us, that the appropriation of the area of Smithfield for a market for live cattle, during a few hours upon two days of the week, is productive of insalubrity to any appreciable extent.

We may further remark, that no clearly defined plan for a substituted market, with the means or cost of carrying it out, has been suggested, so that we are not afforded the opportunity of judging whether it is likely to obviate the assumed inconveniences; the removal of Smithfield being altogether an experimental proposition; the Report leaving the position of the site wholly undefined; excepting indeed it is said, that it would be desirable to remove it to a site detached from the central position of the metropolis, and that several eligible sites may be found on the northern suburb of the town. It must be borne in mind, however, that the further the market is removed from the central position of the metropolis, where it has existed for centuries, the greater will be the disarrangement and dislocation of the present commercial relations, and the greater will be the direct and indirect loss for which the public, as the consumers, will first or last be called upon to provide. The removal to a site so indicated will involve further a considerable departure from the desiderata laid down by the Select Committee of the House of Commons before mentioned, viz.:—the proximity to the place of disembarkation and the bridges, particularly that of Blackfriars;—as well as interpose an inconvenient distance between the place of sale and the monetary district in the neighbourhood of the Bank and Lombard-street; and if in the locality pointed out, a larger space can be obtained at less cost than it could be provided in the City, it must be borne in mind, that its comparative cheapness is attained by reason of a sacrifice of convenience on account of its remoteness from the centre of business; the increased cost of a site near Smithfield would, in our judgment, be more than counterbalanced by the benefits arising from its proximity to the focus of trade.

As the site of the proposed Live Meat Market submitted by the Markets Improvement Committee of the Corporation occupies only one acre of the area of the existing market, and leaves a space of five acres at present unappropriated, that space might be reserved, or occasionally used for the temporary accommodation of the salesmen on the “great day” as it is termed; and for the future enlargement of the live and dead meat market should it be required:—or the dead meat market might be placed on the western side of Victoria-street, leaving a space of nearly 13 acres for the live cattle market.

It has been shown, by long experience, that the supply and demand in the live meat market fluctuate with the seasons; and that at the period of the year when most space is required for sheep, the supply of cattle is smaller; and *vice versa*. Arrangements may, therefore, be made by means of shifting pens, so as to adapt in each season the enlarged space for the particular description of stock requiring accommodation.

Having considered and commented upon the alleged inconveniences and objections, we approach the second question, viz., what is the appropriate and practical remedy? being satisfied that imperfect or impracticable plans which cannot for a long time be even attempted, much less carried out, will only postpone the day of improvement:

We have, therefore, carefully examined and considered the plan and model of a new market and other requisites, which have been laid before us by the Markets Improvement Committee of the Corporation of London in such full detail. They appear to be conceived in a liberal and comprehensive spirit, to be prepared with a sincere view of removing the existing evils, and framed with much practical skill and ingenuity in their arrangements, after deliberation and a careful consideration of the circumstances of the case. In our humble opinion, the adoption of this plan would effect a great public improvement and decided amelioration in the approaches to both the proposed markets,—in the accommodation for the sale of the live animals in Smithfield—and the dead meat—as well as improved facilities for the traffic and trade of London generally.

Under these circumstances we do not hesitate in advising the adoption of this measure.

We cannot consider that the course thus recommended by us is liable to the objections urged against it; namely, want of space, and the expense which it will entail.

With respect to space, it offers accommodation for a greater number of cattle than has been suggested, by parties connected with the trade, as likely under any ordinary circumstances to be brought for sale; while the area proposed to be used for the market is nearly double the extent of the present market area, and it is capable of much greater extension, if necessary, at any time hereafter: it also makes provision for lighting and well ventilating the lairs.

The principal objection to the plan proposed appears to be founded upon the expenditure required to carry it into execution; but we have reason to believe that the Corporation of London, having a due regard to the welfare of the citizens, and the public at large, are well aware of the necessity of making sacrifices to prevent so extreme an experiment being made, and so serious a derangement of commercial connexions as would be produced by the removal of Smithfield-market; an opinion confirmed by the fact, that the Corporation have expended large sums in the improvement of Smithfield-market, from time to time, as the wants of the public have rendered these improvements necessary.

The plan proposes that the Corporation shall advance the money which this great improvement will demand, in the belief that it will obviate the existing evils; at the same time it will prevent that serious injury to the property of a large portion of the citizens, and the general trade of the City, which cannot fail to be consequent upon the removal of the market.

For the reasons now adduced the objections do not appear to us to prevail against the proposed plan:—whilst the evidence in support of it appears to us strong and conclusive.

First.—No public thoroughfares and footways are to be permitted within the market; by which the whole area will be devoted uninterruptedly to the purposes of the market, and the thoroughfares and footways adjacent rendered free from danger and annoyance by the market traffic.

Second.—The market is intended to be inclosed, and therefore capable of being shut up at any hour, as may be found requisite, to regulate the passing of cattle through the public streets.

Third.—The different parts of the market are to be commodiously arranged; the cattle being in one part,—the sheep in another,—the pigs and calves in a third: and all seen at one view.

Fourth.—The dead-meat market, now cramped in the small space occupied by Newgate market, and being the cause of the obstructions in the great thoroughfare of Newgate-street, will be placed close to the live-meat market, in a locality where it may be enlarged to any necessary extent.

Fifth.—Slaughter-houses capable of proper and easy control and inspection, and also of extension, if necessary, will be in the immediate vicinity (as they should be) of the live and dead meat markets; whereby the three kinds of business will be carried on less expensively, and the streets less encumbered with cattle and carts passing and re-passing through the same.

Sixth.—Great improvement in the adjoining approaches will be effected, as well as a new line of communication made both eastward and westward.

Seventh.—A regulation toll is proposed, which will effectually oblige buyer and seller to close their transactions at an early hour, leaving the streets free from interruption during the hours of general business.

Thus, in our judgment, will all the principal practical inconveniencies of Smithfield and Newgate markets, and the slaughter-houses, be removed; and a market will be erected with all necessary appendages commensurate with the requirements of the metropolis, in regard to its supply of animal food, and to the manner in which this supply is now conducted.

In conclusion, we suggest that facilities should be immediately afforded for effecting the foregoing objects by legislative enactment, so that no delay may be interposed to prevent the realization of advantages which, in our judgment, will be greatly beneficial not only to the citizens of London in particular, but likewise to the inhabitants of the whole metropolis.

(Signed)

JAMES DUKE.
JOHN WOOD.

Whitehall, 24th May 1850.

MINUTES OF EVIDENCE

TAKEN BEFORE THE

SMITHFIELD MARKET COMMISSION.

TUESDAY, December 11, 1849.

December 11, 1849.

GEORGE CORNEWALL LEWIS, Esq., M.P., in the Chair.

Mr. W. Giblett.

Mr. William Giblett, examined.

1. How many years have you been in trade as a butcher in London?—Upwards of 40 years.

2. Are you well acquainted with the manner in which London is supplied with live and dead meat?—I should be rather a dull scholar were I not practically acquainted with it after so much experience.

3. Is it a subject which, independently of your trade, has occupied a good deal of your attention?—It is.

4. Do you remember the Committee of the House of Commons, on the subject of Smithfield market in 1828?—Yes; I have a perfect remembrance of the occasion. I presume you mean Mr. Robert Gordon's Committee; and, perhaps, you will allow me to make a few remarks with respect to that Committee, and as to what took place just about the time that was appointed or a little before, and what has happened through a series of years with respect to Smithfield market. The inquiry in Mr. Gordon's Committee applied exclusively to Smithfield market; the master butchers of London had had a public meeting, I think at the Freemasons' Tavern, upon the subject of the unfit state of Smithfield market *then*; they complained to one another about it, and they agreed that they would make their complaints to the City authorities. They resolved upon a petition, and obtained the signatures of, I think, more than 1,500 master butchers, and they deputed a certain number of their own body to wait upon the Court of Common Council, and to present their petition. I happened to be one of those who were there. We were received in the most courteous, respectful, and kind manner, and it was admitted that there were cases of complaint, and I am rather desirous, if it comports with the arrangement of your proceedings, to read and put in that petition, which shows exactly the nature of the complaints we then had to make. [*The same was read as follows:*]

1828.—Petition presented to the Court of Common Council, by 1,527 Master Butchers.

That your petitioners form a deputation from the Committee of Butchers, appointed at a public meeting of the trade of Butchers, of the cities of London, Westminster, and the parts adjacent, held at Freemasons' Tavern, on the 17th January, 1828. That your petitioners and the trade in general, as well as others, suffer very great loss and inconvenience for want of sufficient room in Smithfield market to transact their business, and that the cruelty complained of by the public chiefly arises from the same cause; that animals of every description brought there for sale are deteriorated in quality, and lessened in value by various descriptions of cruel usage, to make them occupy the smallest extent of room possible in the market during the period of their sale there; that your petitioners consider an enlargement of Smithfield market absolutely necessary to remedy the evils complained of; that your petitioners are firmly of opinion that an alteration of the market-day from a Friday to a Thursday would tend to equalize the market, and prevent much of the injury and cruelty complained of taking place; that your petitioners are confirmed in their opinions, by the unanimous request and signatures of 1,527 master butchers, being housekeepers of London, Westminster, or the parts adjacent, requesting your petitioners to obtain such alterations.

Your petitioners therefore pray, that you will take this their petition into consideration, by first allowing them to be heard at your bar in support of the allegations contained therein, and further, by adopting such measures as will remedy the evils complained of.

In addition to that, I am desirous of mentioning to the Commission very particularly that the subject of Smithfield market had drawn very largely upon the attention, and I may say the anxiety of the City authorities: they have always been alive to the important subject now in hand. From the year 1802 to the year 1835 or 1836, the City authorities made no less than 15 applications to Parliament to be allowed to obtain powers to enlarge the market. In the year 1809 a very important circumstance took place. The city authorities approached by deputation, I think, the then existing Board of Trade—and the noblemen and gentlemen there refused the prayer of their petition, which was, to be privileged to enlarge the market, and they recommended them to apply to Parliament for powers to obtain a site outside the metropolis, not less than 12 acres, for the purpose of holding this market. To return to the Committee of 1828, a great amount of evidence was taken on the subject; the want of space was fully admitted by all parties, and the City authorities pledged themselves to make certain alterations: those alterations were in pro-

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December 11, 1849. gress some time afterwards—for instance, the carts and carriages were shut out from the market during market hours, up to 12 o'clock at noon. They also establish a very effective police, and too much cannot be said in their praise and to their credit, for they are alive to their duties, not only by day, but by night, and they, the City authorities, enlarged the market to some extent. The consequence of all this was, that, having reached the period of 1834, the butchers feeling themselves greatly aggrieved by Mr. Perkins who went to Parliament in the same year 1834, for powers to hold a market in his own right at Islington. The butchers opposed that very strenuously, and did everything in their power to prevent the success of Mr. Perkins, and they then succeeded, for they brought a mass of evidence which was not to be doubted or questioned for a moment, to prove that those very evils which they had complained of so seriously in the year 1828, were remedied to so great an extent in the year 1834 that they were content and satisfied, with the exception of some few days in the year, especially in the autumn months, when they complained that they had not space enough. And it was nearly the unanimous opinion of those master-butchers and salesmen, and others, that, if the City authorities gave them one more acre in addition to the site they then had the supply of beasts and sheep that then came to the market might be accommodated to their satisfaction. That was in 1834.

5. Did you conduct the case of the butchers before the Committee in 1834?—Yes, I did; that is to say, I was agent for them, and represented also many graziers whose property extended over a great breadth of land.

6. Were you fully informed of the views of the persons connected with the trade who opposed the Bill for Islington market?—Fully.

7. Will you proceed with your statement?—Perhaps the Commissioners will allow me to give them the amount of the supply at those respective periods of 1828 and 1834, as they will find that they will have occasion to refer to them, and to make a contrast between them and the present supply. With the permission of the Commissioners, I will confine myself to the supply of Mondays, because it is only on Monday that we find the inconvenience that is complained of. I will give it in the year 1827, on which the complaints were grounded, because the year 1828 was the current year when the complaints were made. I will give 1827 and 1833; in 1827 the average number of beasts on the Monday was 2,378, and of sheep 21,968. There were five Mondays in the year when the number of beasts reached 3,000, the maximum amount, and the number of sheep amounted to 30,000 only once. In the year 1833, the average number of beasts on the Monday was 2,685, and 19,179 sheep. The number of times the beasts reached 3,000 was 15. At that time the sheep had fallen off very considerably; they only reached 24,000 three times, so that the supply of sheep in 1833 fell considerably below that of 1827. It was at this particular period of 1834 (arguing upon the data of 1833), that the butchers came to Parliament and gave evidence of entire satisfaction on their part if the City would add one acre more land.

8. In what manner was the question with respect to Smithfield brought before the Committee for Inquiry into Islington market?—By Mr. Perkins applying for powers to hold a market at Islington, we, antagonistic to Islington, petitioned; as butchers, to be heard, and our petition was referred to the Committee.

9. Did the promoters of the Islington Market Bill propose to abolish the market at Smithfield?—When pressed, they were disposed to deny that; but the clauses of the Bill detected their intention, and it was very evident that they did intend to abolish Smithfield market. When I spoke of the butchers, I ought to have spoken first of the City authorities; they were foremost, of course, in the opposition to the Islington Market Bill.

10. Was the Islington market proposed as a competing market or as an exclusive market?—On that occasion it was proposed as an exclusive market, not openly or avowedly, but by the clauses of the Bill we found out that that was the intention. Subsequently, in the next year, they talked about a competing market, but not in the year 1834.

11. What was the result of the Islington Market Committee?—The result was Mr. Perkins' defeat in 1834; if you please to allow me, I will beg to draw your attention to one great objection which the trade had to Mr. Perkins' market at Islington, namely, the distance of Islington market from the dead-meat market. They, the butchers, said it would be impossible for them to conduct their business properly if the markets were at so great a distance from each other. Again, they objected very much to the site of Islington market; it happens to be in a place that has been dug out for clay for bricks, and it is a mere hole, many feet below the level of the roads surrounding, and the approaches to Islington market were such that it was almost ludicrous that a person should be found who would come forward and ask to hold a market there which should have 25,000 sheep and 3,000 beasts to be passed into the market and then to be passed out; it was next to impossible unless our business was spread over two days instead of one. The vast number of carriages and other things that they would have had to meet coming southward and westward, namely, by the Angel at Islington, along a crowded thoroughfare, would have been so inconvenient that it was almost farcical to talk of holding the market in such a place. This was the way in which the butchers put their objections at that time.

12. In short, you consider that under any circumstances Islington market is totally inapplicable to the purposes of a cattle and sheep market for the metropolis?—I should almost ridicule the idea that the business of Smithfield market could be conducted at Islington market. It could not exist many weeks by any possibility.

13. That was your feeling in 1834 and it is your feeling now?—Yes, it was then and it is now.

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14. Has experience confirmed the views which the butchers then entertained with respect to the unfitness of Islington market?—Decidedly; it was tested in the beginning, when every effort was made to open the market with *éclat* by bringing the best stock to the market that they could possibly procure. They called upon their friends in all directions, sellers as well as buyers, to come to the market, hoping that they would do the best that they possibly could for Islington market; and so they tried it; but after a few weeks the sellers began to find out that the principal part of the buyers were those persons who were what are called jobbing, or middlemen, who bought up the stock at Islington market, and brought it to the City market, where it was resold at a considerable profit. That was the fact.

15. An Act of Parliament was obtained for Islington market?—Decidedly; but it was understood that it was to be a competing market, and we went away almost with merri-ment at the idea of Mr. Perkins having got a competing market. The only thing that prevented that feeling going to excess was, that here was a person laying out his money, 80,000*l.* or 40,000*l.*, and no one could help feeling for an individual who had been so misled as he had been by his friends and those who had represented to him the certainty of success.

16. Did the City and the butchers withdraw their opposition to the Islington market Bill as soon as it was understood that it was to be a competing market?—I think they had given their evidence before the declaration, that it was to be a competing market; but immediately upon learning that it was to be a competing market, the butchers, generally, took no further interest in it.

17. Were some clauses of compensation introduced with reference to the City?—The City authorities had to look to that.

18. Did the Bill ultimately pass by consent?—Decidedly. I am desirous at this period of alluding to some evidence that was given in the year 1835 before the House of Lords, which was given upon oath, and in a very serious manner by some persons who, I think, would be as far from saying or meaning wrong as men can be. For instance, there was Mr. Collins, an old and very respectable salesman, who had stood upon the Smithfield stones many years, and his father before him, the principal part of his business life. This Mr. Collins gave some most important evidence. He, in the first place, admitted, that in the year 1828 he was so much dissatisfied with the state of Smithfield, that he joined with the butchers and complained of it. He stated, that he also joined the butchers in 1834; he stated to the House of Lords, that he was perfectly satisfied with the alterations that had been made, if the City gave them one acre more. It was put to him upon cross-examination, whether he had not originally made an estimate of the damage done to the cattle in Smithfield market, and he admitted that he had. And what was that estimate? It was to this effect, that before 1828 the damage done to the stock, in his opinion, was not less than 40,000*l.* a-year. They did not follow it up by asking him questions with respect to that year; but if it is the pleasure of the Commissioners to see the evidence taken before the House of Lords, they can, and they will find the information it affords to be very considerable.

19. With regard to the statement you have made, as to the failure of the Islington market, how far do you consider that that depended upon the continuance of the general system which prevailed at that time, and which is still in use, of slaughtering cattle at the places of sale, generally, throughout the metropolis, and the consequent necessity of driving both beasts and sheep into the metropolis?—I think Mr. Perkins promised that he would give all those facilities if he might have his Bill, such as erecting public slaughter-houses, and having the tallow melted, and the horns burnt, and everything of that sort in that immediate neighbourhood.

20. But seeing that these facilities were not given, how far would you attribute the failure of Islington market to the fact of their not existing?—It was so very inadequate, and the local disadvantages were such that it could not succeed; the neighbourhood all round about is so completely covered with houses that it would have been utterly impossible to obtain a site on which such business could be transacted.

21. You are aware that there were Committees of the House of Commons upon Smithfield market in 1847 and 1849?—Yes, I am perfectly aware of that.

22. Did you take any part in the proceedings before those Committees?—Not any in 1847 and 1849.

23. Have you any objection to state to the Commissioners your reason for abstaining from taking any part in the proceedings of those Committees?—Not at all. We have had very large experience, and efforts have been made for the cure of the evils that are complained of in Smithfield market. They have been now going on for a period of nearly 50 years, and all the efforts that have been made have proved abortive, and complete failures in the end. They have met the case for the time being, in a certain degree, but that which renders it utterly impossible for the City authorities to cure the evils, at the present time, is the enormous increase of supply which counteracts their best endeavours. The City authorities have evinced, at all times, an anxious endeavour to remedy those evils, and they partially have done so when the supply was considerably less. But now the supply is above one-third more than it was, for instance, in the year 1834, when the recommendations of the whole trade were brought before Parliament in the way of evidence, (and it is that great increase of supply which has caused the increase of the evils which are now complained of,) so that they are returning towards the state in which things were in the year 1828, with this exception, that they keep out carriages till 12 o'clock in the day, and they have a good and effective police. Therefore, I saw, that every effort of the City was in vain

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to meet the case; that the public demand was growing louder and louder, and greater and greater, for an alteration of the present state of things, and I thought the time had arrived when a complete alteration and change of the present state of things must take place; therefore, I took no part in what I should call a palliative measure.

24. You abstained from acting as you had done before, as the organ of the butchers, in upholding Smithfield market?—I did, during the last two or three years I have expressed an opinion that the market must go: that it is only a question of time.

25. You are well acquainted with the present state of Smithfield?—Decidedly. I am there twice a-week.

26. Are you in the habit of attending Smithfield market in the way of your business?—Yes; making purchases almost every market day.

27. Will you state what you consider to be the advantages of Smithfield market?—The advantages of Smithfield market I consider to be very great to the trade of butchers in London, inasmuch as the position is central, particularly with reference to their shops; and they can always procure, to any extent, whatever they want. They have it almost at their very doors. It is the locality of the market, that gives to the butchers those advantages that I am speaking of. I cannot speak of any advantages which are derived by the public from the situation of Smithfield, except through the butchers.

28. Is there any other recommendation of Smithfield which occurs to you besides its central position?—Certainly not. I can think of no other parties who are benefited to any extent by Smithfield market save and except a few persons, shop-keepers and publicans, who live round about the neighbourhood of the market. The advantage of the locality of Smithfield market consists, as I have said, in its nearness to the dead-meat market, which renders it most important to the trade of butchers.

29. What do you consider to be the disadvantages of Smithfield market?—The disadvantages of Smithfield market I consider to be chiefly, the want of space, the want of ample room for all the purposes of the market. The public also complain very greatly of the stock traversing through the streets, and that, certainly, is an evil which, while Smithfield exists, and the present order of things continues, cannot be remedied in any way that I know of.

30. If cattle are not sold on a market-day, but are driven in and out, and again a second time, have they not four times to traverse a great part of this town?—Necessarily, if they come twice to be sold, they will have to traverse parts of the town four times, wherever they may go to, whether it be north, east, west, or south, and there are layers at three points of the four.

31. How can you prove, by facts which the Commissioners can verify, that the area of Smithfield is too small?—When we have large supplies, the entire stock cannot be got in, and we are obliged to wait till some are sold before we can receive the residue in. That has been the case for a series of years past; in large markets it has been the case even from 1828 to 1834. We have had markets of 30,000 sheep, and the maximum number they could pen at one post was 2,400 at that time, so that there is, first, the disadvantage of want of space in getting the stock into the market; then there is the difficulty of handling them in a fit and proper way; and I cannot pass over the serious deterioration that happens to the stock generally, but more particularly to the sheep; they are often in a dreadful state of damage and deterioration in consequence of being so hurried and pressed by dogs, and squeezed in getting them into the market the best way they can; for, be it observed and borne in mind particularly, that the approaches to Smithfield remain unenlarged, not widened, except in one or two trifling instances. We have not, therefore, any increase of approaches to Smithfield in proportion to the extent of the increase of supply, there being no more avenues than when we had little more than half or two-thirds the amount of stock. If the difficulty of ingress and egress was very great in 1828, what must it be now?

32. Do you think the want of space in the market leads to the exercise of cruelty towards the animals?—Decidedly; the cruelty that is practised generally is in consequence of the want of space to get the stock in and out of the market. That is the principal cause of the cruelty. That there are some wanton persons who inflict blows that are perfectly unnecessary is very much to be lamented, but the principal cause of the cruelty is the want of space.

33. Do you consider that the chief portion of the cruelty practised towards the animals in the market is inevitable?—I have heard it described under the term "necessary cruelty;" and if the animals are to be placed in the market, in a certain time, and in such numbers, I do not see how it can be avoided.

34. Have you been in the habit of attending country markets and fairs of cattle?—Yes; for several years past I have attended the market at Southall.

35. Does it appear to you that more cruelty is used in Smithfield market than in other markets and fairs?—Decidedly. In ordinary times they walk in and out of those markets as they would walk from one field to another.

36. To what do you attribute the difference—is there any other cause for it but the difference of space?—I should say that difference of space lies at the bottom of all the objections I have made.

37. Do you think that there is anything in the habits of the London drovers that leads them to be more cruel to animals than the country drovers?—There are often wanton blows struck by low-lived persons. I am obliged to say that we should be happy to rid ourselves of them, but they are not in our employment, they are generally employed by subordinates; that is to say, if I have a drover who is my subordinate, he is a master drover, and he employs who he thinks proper, he being answerable for the care of the stock

to me. He gets any person that he can, at a cheap rate, who has a badge. I should insist upon his having fit and proper persons if I had the power to do so; but he works for 15 or 20 other persons as well as for me. If our stock is brought home not to our satisfaction, we, having no control over those middle men, make our complaint to the master drover, but if they bring the cattle home well we are content: no inquiry is then made into their moral conduct.

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38. Does the central position of Smithfield market, which occasions the cattle to be driven through large portions of the town, increase the cruelty exercised towards them very considerably?—If Smithfield market was large enough to accommodate the entire stock, the circumstance of its being central would give facilities for radiating the stock to any point of the compass.

39. Supposing the same quantity of stock that is brought to Smithfield were brought to Southall, and there were the same space at each market, are the facilities of access to Southall at all to be compared to those of Smithfield?—The facilities of entering Southall market are very few; there is only one leading road to and from it, and the minor roads are very narrow, and by no means qualified or fitted for such a traffic. Southall is a very insignificant, small village, altogether unfit for a *large* market.

40. You have made some observations about the class of men who are called drovers, and whose cruelty is no doubt sometimes the effect of passion, and very blameable; but you are aware that those parties cannot be employed without being licensed; so that the humblest of them must have a badge to entitle him even to move a beast or a sheep?—Yes.

41. And you know that in case of any complaint they are brought before a magistrate and punished?—Yes; but I understood the question to be more as to their moral character, and whether those people do not sometimes inflict wanton blows, which I have admitted they unfortunately do. Those who have badges participate in that character to some extent; I do not mean that all do by any means; still some of them are of that gross and low character.

42. You were understood to say that the chief part of the cruelty practised at Smithfield was inevitable in consequence of the want of sufficient space?—Yes.

43. But there may be wanton cruelty, such as you describe, in Southall, or any other market?—Yes, but that is suppressed by the salesmen, and checked by the presence of the police: the master drovers and the salesmen would do as much as they could to check it.

44. You stated that the principal part of the cruelty takes place in taking the stock to and from Smithfield in consequence of the bad access. Supposing there were a railway communication into Smithfield itself, do you consider that that would materially diminish the evil?—Except as to so much of the damage as is incidental to railway travelling, it would entirely supersede all the damage and evil that I am speaking of, that is, going into the market.

45. Is it the fact, that in consequence of the animals being urged by the drovers in coming into the market and in going out of it, they are much heated?—They are very much heated and damaged in the flesh; the muscle is interfered with, and rendered much less valuable than it otherwise would be. In taking away the beasts and the sheep from Smithfield market on crowded days, the difficulty there is of getting them away subjects the animals to such cruelty, and to such over-heating, that I have no hesitation in declaring that on some occasions when I have bought the best that money could buy (according to my judgment) in the market, I have had whole lots of stock (of sheep more particularly) from which I could not select a superior joint of meat to send to any one of my best customers. I have found that to be the case several times. But I must not ascribe the entire of that to Smithfield market. The sheep, well fattened at a period of the year when they have a heavy fleece upon them (those that walk up to market), encounter a great deal of fatigue and inconvenience from being so travelled, and they come into the market without being properly rested; then superadded to that fatigue and inconvenience is the market distress they are subjected to; these, with the drift home, leaves them at last in the state I have described.

46. Then, speaking as a person having professional knowledge upon the subject, you entertain no doubt that the quality of the meat is deteriorated by the treatment of the animals in Smithfield market?—I am bound to admit that, to a very great extent, it is.

47. Is it your opinion that that is, practically, the general experience of the trade?—I should say that whoever speaks honestly upon the subject must declare after the manner I have attempted to describe.

48. Does this apply altogether to the Monday market?—Chiefly, but not exclusively to the heavy supplies of the Monday markets.

49. Are you aware that many cattle and sheep now come to London by railways?—Certainly.

50. Do you think it likely that any part of the injury you complain of may take place in putting those cattle and sheep into the trucks?—I have alluded already to the damage that they sometimes receive upon the railway. On some occasions they receive a very great deal of damage. I have known five or six oxen fall one over another in a railway truck, but that applies to a few, and it is an exception; it is not the rule.

51. Are the animals that are brought into Smithfield, after having travelled up by railway, or those that come into Smithfield, after having walked up along the road, in the better condition?—Decidedly the railway travelled are in the best condition; they often

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52. Do they come equally well by all railways?—I am not a judge of that.

53. Have you any opinion with regard to the way in which they should be paid for in coming by railway. Is it important that they should be paid for by the head, and not by the truck?—That is a subject of very great importance. When a person has a number of sheep to bring to London, he crams as many as he can into a truck to save expense, and therefore it is highly important that they should be paid for by the head, and the numbers limited according to size.

54. Do you consider that any disadvantage arises from the butchers dealing with the salesmen, and not with the graziers?—I am not at all aware of any disadvantage that can arise to the butchers in this way; the salesmen generally know a great deal more of the value of stock than the owners themselves do; that is, some of them—by no means all. If we came in immediate contact with the owners of stock in the market, I think we should often get much better bargains; still it is of great importance to graziers who choose to come to sell their own, that they should be properly accommodated.

55. Do you think that the present arrangements of Smithfield market lead to the existence of the class of salesmen intermediate between the graziers and the butchers?—I think there would be no difference let the market be where it may; we must have middlemen to dispose of the stock; the graziers could not dispense with their services. You have now, generally speaking, men who are consummately experienced in their business, and to whom I would, if I were a grazier, rather send my stock generally to sell; I would take their judgment in selling in preference to my own—that is, supposing I were a grazier without the practical knowledge of a butcher that I think I now have. I should say that you have in Smithfield some most respectable, honourable, honest men; and that the business, as a whole, is transacted in a manner that reflects great credit upon them as a class of salesmen. I do not mean to say that there would be no exceptions.

56. Do you think it a disadvantage to the grazier to employ a salesman—do you believe that it would be for his interest to sell his own cattle in the market?—His interest is to send his stock to a salesman who understands how to make more of it than he himself could do.

57. Is it the practice for the salesman or the banker at Newgate market to make advances to the butcher in many cases?—Not that I at all know.

58. Are not all cattle paid for in cash?—Not always. There are certain periods of credit given occasionally where persons are in the habit of doing business together. The usual way is for the butchers to pay for the stock before they take possession of it, but there are persons who can get two or three days' or a week's credit, if they choose to take it, but an extended credit beyond that is not customary.

59. The transactions generally are ready-money transactions?—They are. If I go to Smithfield, or to a country market or to a fair, I take my money or my check, and I always pay before I have the stock driven away from the market. That is the ordinary rule of the trade; but there are exceptions, such as I have described.

60. Is there any doubt that the grazier does obtain the real value for his beast when it passes through the hands of a salesman?—I think there is no doubt of it in all ordinary cases. There may be exceptional cases where a person may be wanting in judgment, or where some circumstance may occur, such as an extremely bad market. If a man has an extremely bad market, he may not realize so much as he knows the animal ought to make, though he cannot get any more because trade is so bad, and he must effect a sale.

61. About how many beasts has a salesman to sell usually in a large market in Smithfield?—Some 50, some 100, some 200, some even 300, upon occasions. I have known cases (but those are rare instances) where they have had 300, but from 100 to 200 is of common occurrence.

62. Within what period of time are those sales effected?—At this time of the year, from daylight to three o'clock—the market closes at three: in summer, from five o'clock in the morning, or even before.

63. Five or six hours?—Longer than that; it is from seven to eight hours before all the stock is sold, but the majority go away in half that time.

64. Do you entertain any doubt that a salesman who has so many beasts to sell can do justice to each of his customers, and assure the graziers who have sent their beasts to him that he gets the best price for them?—I do not think I should be justified in giving an answer to that question other than this, that I myself should have no doubt of the business being done as well by one who sells his 150 or 200 beasts, as by a man who has only five beasts to sell.

65. With equal justice to the grazier?—And with equal justice to the grazier.

66. Are particular butchers in the habit of purchasing of particular salesmen?—There is a disposition on the part of some butchers to go to those persons with whom they are friendly, or with whom they have been in the habit of laying out their money; the salesman knows exactly the sort of bullocks or sheep that they want. Some of those men are timid men, and if they are in the hands of respectable salesmen they are not taken advantage of; but, generally speaking, I buy anywhere and everywhere, and of anybody, whoever has got stock that happens to suit me, and many butchers do the same.

67. What commission is charged upon the sale of stock?—It is very small, and it is arranged in a way that I should like to see revised. For instance, if you send a bullock of five pounds' value (of which there are some), and if you send one of fifty, they charge you

the same commission; the same attention is given to the small bullock as to the large one. It is so much per head, 4s. or 5s. as the case may be. December 11, 1849.

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68. Is the sale, in fact, effected when the salesman sends back the money?—In ninety-nine cases out of one hundred throughout the year, the beast are sold, decidedly. There may be some few cases where it is not, but I should repeat that, in ninety-nine cases out of one hundred, the beast are sold *bonâ fide*. I have been myself a salesman for twelve months. I was in partnership with a brother in the trade, and I know everything about it.

69. Will you state shortly what the process is of selling a beast; supposing a beast is sent up from Northamptonshire, what does the grazier do with it; does he consign it to a salesman?—The grazier would consign it by a drover, who is in the habit of coming to London. Supposing he had five beasts to send up to Smithfield to sell, he would say, "Take these five beasts to Mr. Maydwell, or to any other salesman." That drover drives them up to Islington, or brings them by railway according to the desire of the grazier, and he then deposits them with the drover of Mr. Maydwell, the salesman, and then Mr. Maydwell takes charge of the animals; he goes to see them before they come into the market; he judges the value of them, and on the Monday morning, when they come into the market, he handles them over, which is necessary to be done before any man can arrive at their exact value, and then he sells them at the best price he can, and sends the money forthwith, the same day if required, or the next morning is more usual, to the grazier. That has been the uniform practice, and, in fact, I know of no exception to that.

70. Are the animals driven from the railway to Islington, and thence to Smithfield by the salesman's drover?—By the salesman's drover, who has received them into his charge.

71. Are they driven from Smithfield by the butcher's drover?—After the purchase, the butcher's drover takes charge of them, and gets them out of the market in the best way he can, and it is his duty to bring them to the premises of the butcher.

72. You spoke of the advantages of Smithfield being very great to the trade of butchers on account of its central position, but you said, you saw no other advantage from it to the public. Is not that an advantage to the public?—I believe I said that, through the butcher, it was of advantage to the public. Any benefit given to the butcher is indirectly given to the public.

73. Do you think that, if the cattle market were removed to a short distance from London, the butcher would be compelled to sell his meat at a higher price to his customer than he does at present?—I should not be able to define the fraction that would be added in consequence of any charges that might be so made. There might be something, but I could not define it. It would be so insignificant, that it is not an item that I, as a butcher, or as one of the public, should take any notice of.

74. You stated that Smithfield is a central situation. Do you consider Smithfield now, after the great enlargement of the town, to be in a central situation?—Not exactly central, but the most central situation to the trade generally who supply persons even at the west end of London. For instance, there are many butchers who live in the neighbourhood of Bond-street or Oxford-street who supply customers at the extreme western part of the town.

75. The metropolis has been enlarged northward and eastward, as well as westward?—Yes; but it is not very far from a central position.

76. Are you in the habit of attending Newgate market?—Yes, and have been as long as I have been in business.

77. What is sold at Newgate market?—Newgate market is a general depository; first, for what is called carcass meat, which consists of the carcasses of animals that are killed by carcass butchers for the express purpose of supplying that market. That applies to town-killed meat. Again, we have an immense quantity of meat sent from Scotland, and from various parts of England, even from a distance of 150 or 200 miles; and the supply which is immensely increased, more than the proportion of stock is at Smithfield, comes in of all sorts as to quality, and as to kinds. Again, Newgate market is a depository for the coarse parts of many animals that are slaughtered in neighbourhoods where butchers live, who cannot dispose of such parts, and consequently send them there for sale. Again, it is a depository for the prime parts of animals that are killed by butchers who live in poor neighbourhoods, and who send the prime parts of their animals to this depository because they cannot get rid of these prime parts to advantage, any more than the butchers I have been alluding to at the west end of the town among family connexions can dispose of the coarse parts; so that at Newgate market is, in point of fact, a place where very large quantities are sent to be sold, good and bad, wholesale and retail; and to the butcher, it is of incalculable advantage to have such a market to go to.

78. Is anything besides dead meat sold in Newgate market?—There is a poultry market.

79. Is the poultry market extensive?—It is but small, but it infringes very much upon the space which is wanted for the dead-meat market.

80. What is the distance from Smithfield market to Newgate market?—I cannot give it in yards; I should say, about three or four minutes' walk.

81. What do you consider to be the advantages of Newgate market?—The great advantage consists in its being the general receiving-place of all the articles I have attempted to describe; so that any and every butcher who wants anything of any kind can go there to be supplied, and in all ordinary cases he can get what he wants, except upon extremely short supplies: there are some few occasions of that sort; but it is of

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great importance to butchers that there should be such a market as Newgate market, as respects the accommodation it affords to the trade in every point of view.

82. Is it also convenient to the trade that it should be in the immediate vicinity of the cattle market?—It is. I would say it is all important in the nature of things, and according to the custom of transacting the business of butchers, that they should be in the immediate neighbourhood of each other.

83. Are the butchers in the habit of attending both markets at the same time; that is to say, do they go from one direct to the other?—They are generally in the habit of attending both markets on the days on which the cattle markets are held, and they go from one market to the other. I, for myself, have no means of knowing how to regulate my dealings in either market without I know what is the supply in each; as, for instance, if I go to Newgate market in the morning before it is light, at this time of year, I can tell, without asking a question of anybody, whether the price is going to rise or fall or be stationary.

84. You form your judgment from the quantity you see?—My judgment is formed by the supply and by the observation I make of the state of trade; either we see the buyers very sharp, quick, and active, buying up everything in a rapid way, or you see them very slow and careless, and the meat hanging about unbought. When I see that, I infer that that the market of Smithfield will naturally be depressed from the state of the dead-meat market, and I go to Smithfield and bid so much less both for mutton and beef in consequence of what I have seen at the dead-meat market. Just so it is, supposing I have gone to the live market first to ascertain what number of cattle and sheep there is in it, and we can always learn what numbers are spoken for, the salesmen ask for so many pens, &c.

85. According to your view, the advantages of Newgate market amount to this, that it is a market for the sale of dead meat of all descriptions, and that it is in the immediate neighbourhood of the cattle market?—Yes.

86. What do you consider to be the drawbacks which accompany those advantages?—They are so great that I believe any description which I can attempt will fall far short of the fact of the case. I will begin by quoting, if you will allow me, what a gentleman in the Court of Common Council said the other day, and which is identical with the fact. Mr. Lambert Jones said, speaking of the City meat market, that our dead-meat markets were in a disgraceful state; they are, from first to last, in a disgraceful state.

87. Will you proceed to specify the inconveniences which you consider to exist in Newgate market?—I think it would be highly important that there should be a plan of Newgate market put before you. If I had such a plan before me, I could point out more clearly to the Commissioners the extreme unfitness of Newgate market. First, in respect to space. The objections in point of space which I have spoken of, as respects Smithfield, are quite as great in every way in Newgate market; the approaches are few, bad, and narrow; the shops are insignificantly small generally, with some few exceptions, and badly ventilated; the passages through which the buyers are obliged to go to the various salesmen are narrow, and so much confined as to be extremely inconvenient. The meat is what they call "pitched," that is, the hampers of meat are pitched in those narrow passages, and the trade have no other way of going about the market but by sideling along past those hampers. On heavy market days, when there are large supplies, it becomes a very difficult thing; and it is almost a day's work, a morning's business before breakfast, to attend and buy a large quantity of meat at Newgate market. What with the crowding and the pushing, and the efforts you must make, it is an exceedingly fatiguing and onerous duty. Again, there is not sufficient space to do justice to persons who consign meat to this market. I should say the loss occasioned to those unfortunate persons is very serious; it is an item so serious as to demand the attention of any and every party who have authority over the market. I beg to speak with great deference towards the City authorities; but I feel it is my duty to speak of facts as I have seen them. The market also occasions a great deal of inconvenience to the neighbourhood—the streets are blocked up early in the morning with the carts and waggons and so forth; and it is with very great difficulty that the meat can be got in and out, and it is with greater difficulty still that they can find places to hang it. In fact, there are times when there is a large supply, that a good deal of meat remains in the hampers unopened; sometimes it happens because the principal part of the business is over before it arrives, but it often happens because there is not room to receive it and expose it for sale. I have seen a large quantity of the meat, when there are heavy supplies, laid on the stones and on the floors round about the interior and exterior of the shop, because they have nowhere to put it. Then there is an evil which, if it were possible, is greater than that, and it applies to the slaughterhouses under the shops.

88. Is much meat injured by keeping, in consequence of the want of space in Newgate Market?—I should say, an immense quantity. The deterioration that it suffers, and the reduced price, the insignificant price at which some of it is sold on days of bad trade, occasions to the owners a loss that is very serious—so serious, that unless it were seen it could not be believed.

89. To whom is that loss?—To the persons who send it to the market.

90. Who are they?—Those who consign the meat to the dead market; they are the owners before it is purchased by the butchers. The observation I have made chiefly applies to dead meat that is consigned from the country.

91. Who are the parties who principally consign meat to the salesmen in Newgate Market?—Almost every provincial town has its butchers, and persons who what they call "job,"—they buy stock alive to slaughter, and they send up many carcasses. They buy in the county market hind-quarters of mutton and roasting beef from the shambles, and send

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them up, speculating upon it. Others send directly their own stock. Many farmers kill expressly for the market, and send up carcasses. At Bury St. Edmund's, for example, there is a party who will send up three, or four, or five hundred sheep a-week, and hind-quarters of beef to a very great extent. From Scotland there are hundreds and thousands and tens of thousands of carcasses of sheep from Leith, and from Aberdeen, and different parts, are very large quantities of beef. A great many come from Berwick, and also from Yorkshire; in fact, now, on account of the steam and railway accommodation, it comes from all parts, and you get stock sent up on some occasions in a high state of perfection, a distance of three or four hundred miles, but in bad weather great quantities come in bad condition.

92. Is all that dead meat consigned to salesmen in Newgate market?—Yes; but I believe there is some sent to and sold at Leadenhall market, but I am not in the habit of attending these, therefore I speak only of what I know.

93. Does the meat sent up under those circumstances from the country ever come direct to private butchers?—There have been a few instances, but so few, that they are hardly to be named.

94. Has the increase of steam navigation, and the introduction of railways, increased the quantity of dead meat sold in Newgate market?—It has. I should say it has doubled it, or perhaps more than that.

95. Do you remember how many avenues there are into Newgate market?—There is only one carriage-way into the body of the market, and that is very narrow, two carriages cannot pass; it leads out of Warwick-lane into the market; but there are many footways in and out of the market,—narrow passages where the meat is hung up for sale on both sides.

96. Is not the meat generally brought in boxes, and carried in carts?—The meat from Scotland, some part of it, comes in boxes, but the majority in hampers. From Yorkshire it comes in sacks, or cloths made up like sacks, to fit a carcass of mutton; a great many come in that way, some in very good condition.

97. In whatever way it may be brought, is not it brought in carts?—From the railways it is brought in waggons or vans. From the carcass butchers' slaughter-houses round about Smithfield, it is brought in carts uniformly, but the railway conveyances are chiefly waggons and vans.

98. But generally speaking, the meat is brought in some wheeled conveyance, drawn by a horse?—Always.

99. Do all the conveyances pass through the one lane you have mentioned?—No, that would be impossible; they stand all round about the entire neighbourhood, in all the street and avenues. They unload and load in those streets.

100. Then they unload at a short distance from the market, at the end of alleys and thoroughfares leading from the market?—Yes.

101. And the meat is carried out on the shoulders of men?—Yes.

102. Do you happen to know whether much meat in a diseased or unwholesome state is sold in Newgate market?—We very often see a quantity of meat that is in a highly improper state, and I would mention, that the City authorities have appointed a person whose duty it is to reconnoitre and find out any meat that is not fit for use. Upon that subject there is a great difference of opinion: some from usage would not object to what I should consider unwholesome or unfit for use.

103. Is Tyler's market exempt from this inspection?—I think that the jurisdiction of the City having been questioned as to Tyler's market, they would not tolerate an inspector from the City, that is a receptacle for a great deal of the worst meat.

104. Are you aware who has been appointed inspector?—No; not since the death of Mr. Fisher. I knew Mr. Fisher very well.

105. Do you know Mr. Pocklington?—Yes; perfectly well.

106. Do you think he is a well qualified man?—I would not risk an opinion upon a subject of that sort, for I have no means of testing his qualifications. He has had a great deal of experience, and no doubt he is a very respectable good kind of man; but to select a person for such an office would be a duty that I should be very particular about.

107. In your opinion, would it be best to select such a person from the butchers, or from any other class of men?—If you can get a person who is perfectly disinterested, with the knowledge that is required, and having no connexion with the trade, it would be far better that such a person should go independently of all persons that he knows.

108. Are you aware of any returns that he has made of the meat that he has seized as unfit for sale?—Not at all.

109. Have you visited Tyler's market yourself?—I have often been through it; but I do not ordinarily.

110. Then you cannot speak with certainty as to the sale of meat in that portion of the market?—No; it is out of my way to go through it.

111. Are not some physical conditions of the market essential to enable the ablest inspector to perform his duty efficiently; that is to say, sufficient space and sufficient facilities for examination?—Yes; which at present do not exist.

112. Would not the crowded state of the market afford facilities for the sale of diseased or unwholesome meat?—I should not think that anything that is diseased or unwholesome would be ordinarily exhibited in common with the good meat in a salesman's shop. It is more likely to be put, even by the salesman's man, back out of sight for the time being, till they decided the point whether it is fit for sale or not. It is common for a respectable salesman to say, "Send for the inspector and let him examine so and so, and see whether it is fit to be sold." A respectable man is jealous upon the subject.

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113. Did you ever hear of instances of diseased sheep being slaughtered in the country and sent up to London for sale?—It is every day's practice.

114. Is not it a notorious fact that there is much greater facility for disposing of unwholesome meat in London than in the country?—I should say, that the facilities are greater. There is no question of that fact.

115. Are those facilities in any way connected with the present state of Newgate market?—I cannot accurately say one place more than another; but Newgate market is a depository of a great deal of that description of goods, and somehow or other it finds a sale; a sale is effected upon it, and away it goes at a low price sometimes; where I do not know.

116. Would you consider the size of Newgate market sufficient for a town containing 40,000 inhabitants?—I should think it would be much more likely to accommodate that number than the present population of London with propriety.

117. Would it be a sufficient market for a large town containing 40,000 inhabitants?—Off-hand I should say, without much consideration, that it might amply supply 40,000; but when we come to millions, it is very different.

118. Is it the fact, that sheep are slaughtered to a considerable extent in cellars, under the shops in Newgate market?—That is the fact; that is the every day's practice.

119. Is that a convenience to the butcher or to the salesman?—To the salesman it is a very great convenience, inasmuch as they have no other accommodations for slaughtering, and some are exceedingly unfit, but they are driven of necessity to the use of these improper places.

120. Is it the practice for the sheep to be driven from Smithfield into the cellars under Newgate market, and there slaughtered?—Decidedly.

121. Is anything but sheep slaughtered there?—Nothing but sheep and lambs underground. There are some slaughter-houses where they kill calves, and, I think, there are one or two slaughter-houses where they kill beasts.

122. You are speaking of slaughter-houses immediately connected with Newgate market?—Under the floors of the shops of the salesmen at Newgate market, who reside themselves, several of them, in the upper parts of the houses.

123. Do you consider that practice objectionable?—I not only consider it objectionable, but, if I may be allowed to say so, I think it is a blot upon civilization that the state of Newgate market should exist, particularly with the manner in which the slaughtering-houses are conducted, and the cruelty with which the animals are treated.

124. Are the animals treated with greater cruelty in those slaughter-houses than in others?—You see them pushing the sheep down steps or stairs—they generally have stone steps. They thrust them down, and they often roll over one another; then they are confined in a very small space, and the slaughtering goes on in a state of ventilation which is unfit for any meat to be hung up in.

125. Under those circumstances, is not the state of the slaughter-house rather detrimental to the meat than cruel to the animals?—It is right to state that, upon killing the sheep, they bring the carcass up to the shop above directly; they do not leave it below in ordinary cases; if they did, it would be very bad for it indeed.

126. How long does it take to kill a sheep?—An expert man has been known for a wager to dress a sheep in five minutes after it is killed, but ordinarily it would take ten minutes or more.

127. What do you suppose is the number of sheep slaughtered in a week in Newgate market?—It varies according to the time of year, and according to the supplies from the country. Many consignments are made from Scotland and other places to salesmen of the live animals, and they kill the sheep on the premises in the way I have described; great numbers, but I cannot say how many.

128. Is Newgate a daily market?—It is.

129. Should you think that there are 4000 sheep killed in a week in Newgate market?—I should say, sometimes it is probable.

130. What is your principal reason for objecting to the system of slaughtering the animals under the shops in Newgate market?—My opinion is, that the animals slaughtered should be slaughtered with as much humanity as is possible to bring to bear upon the subject; that there should be proper places, clean and well-ventilated places, and particularly that the meat, after slaughtering, should be hung up and exposed to a fit atmosphere; otherwise, it is very injurious.

131. You mean injurious to the meat?—Injurious to the meat. It will spoil so much sooner, by reason of earlier decomposition, and become unfit for use.

132. Is the present practice, then, injurious to the producer, injurious to the butcher, and injurious to the consumer?—Certainly.

133. Assuming that the area of Smithfield market is too confined, in what manner would it be possible to remedy that inconvenience?—I have recently given myself to that subject, and paid very considerable attention to it. I fancied that the time is near approaching when an alteration in the present state of things must be made. I hear the public complaints; it is in every one's mouth, "What an abomination Smithfield is!" That is the way in which it is spoken of, and I have considered in what way the existing evils could be completely remedied, supposing that it should be determined that Smithfield market is to be removed. If the City authorities were to enlarge the area of Smithfield to a considerable extent, even in proportion to the increase of the stock, namely, about one-third compared with the year 1833 or 1834, still many evils would continue to exist under that state of things, as we now have to regret them. As, for instance, the approaches to the market; if they remain as they are, and we have one-third more stock driven in and

driven out in addition to the supply in 1833, all the difficulties applying to the crowding, and to the damage to the stock, with all the rest that has been described, will still exist. If the one-third more supply continues, and especially if it should be added to, of which there is every probability, then the traversing of the streets by the cattle and sheep will become an increasing evil in the estimation of the public, and an increasing inconvenience to the neighbourhood of Smithfield and through which they pass.

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134. Do you think that the addition of half-an-acre or an acre to the present area of the market, combined with widening the approaches to the market, would effectually remedy the present evils?—If you had a space equal to accommodate the extra increase which now exists over and above what it was in Smithfield in 1833, and widened the approaches, or gave new approaches, some of the inconveniences would be got over, and some of the evils would be diminished, but the great crying evil, of which the public complain, would remain in an increasing ratio with the numbers of the stock that come to market increasingly.

135. Can you suggest any means by which that could be remedied?—I should say that it is within the scope of possibility, in my humble judgment, to effect an entire and complete remedy of all the evils that we have heard of appertaining to Smithfield market and to Newgate market also. I am of opinion that a new order of things *in toto* should be adopted, and that the business of the two markets should be removed contemporaneously to some suitable site.

136. From your great experience can you suggest any means by which the complaints may be remedied against the present market, either by enlarging the approaches or shortening the hours of the market, or compelling the cattle to leave earlier, or any other means?—I have been going hand-in-hand for a series of years with the City authorities and those who have been prejudiced strongly in favour of the retention of Smithfield market, and we have done every thing that lay in our power as individuals, and I believe the City authorities have done every thing that lay in their power, and there have been fifty years of efforts made, but all the efforts that have been made have been defeated by the fact of the increase of the supply. They have remedied things up to a certain period to a certain extent. But then came another order of things which increased the supply, for which you want another remedy to be applied, and taking the whole question into consideration, including the driving of the cattle through the streets, and prevention of damage to the stock. Now, while I would speak most respectfully of the City authorities, and of their efforts on all occasions (and I believe that their anxiety is as great as that of anybody can be to do away all the evils that exist), I do not think it is within the scope or range of their power to do away the evils that are complained of. I have only come to that conclusion after I have seen that every effort has failed.

137. Would the removal of the market get rid of the complaint of the cattle going along the streets?—To a very great extent, with the superadded arrangements that I should, if I am allowed, endeavour to put before the Commission.

138. Has any plan occurred to you for the purpose of providing what you consider an effectual remedy for the present evils in the cattle and meat markets of the metropolis?—I believe that nothing short of the removal of those markets will answer the purpose, and that to a site where there is ample and sufficient space, the nearest point that can be selected to afford convenience to the trade and to be the least inconvenient to the public. By these means I believe the evils may all be met and done away in time.

139. Will you state the plan you would propose?—I would say the plan should be this—supposing you had an area of ground presenting an eligible site, you should purchase sufficient for all the purposes I am about to speak of. You want, first, the cattle market, then lairs, open grass lairs, together with covered lairs, co-extensive with the demand, whatever it may be, sufficient to accommodate the stock that may come to market before it is exhibited in the market, in which lairs they may be rested, fed, and watered, and every possible care and attention be paid to them that is required, where they shall not incur those extreme pains and penalties (if I may so call them) that they are subjected to in coming to Smithfield market from the lairs. Then you want an area to form slaughterhouses that shall be commensurate to the demand for all the cattle, sheep, calves, lambs, and pigs that are wanted for the purpose, first, of supplying the wholesale meat market under the head of carcassing, which would amount to at least from one-fourth to a third of the entire supply of all that come to the new cattle market. That amount of stock, viz., from one-fourth to a third, would be prevented from occasioning the slightest inconvenience to the public, because after it was purchased from the market it might be returned into the lairs, where the purchasers of that stock would be accommodated with whatever room, shelter, and food they may require, and from those lairs they would take such stock and slaughter them at the new slaughterhouses. Supposing that the cattle market was on the summit of a hill, with slopes descending north and south, and with grass lairs behind toward the north; on the sides of the cattle market westward and eastward commodious covered lairs for the stock in winter; the slaughterhouses should be built in front of the cattle market, not too near nor yet too far off (thus acting as a screen to the cattle market), of a very substantial character, and only with an elevation not too costly but such as would be worthy of the architectural age in which we live, leaving ample space for roads. A spacious market-place for the wholesale meat market, securing abundant space and thorough ventilation, cooling houses, &c., and large areas for waggons, carts, &c., and buildings for stables and cart-houses. Near to those slaughterhouses we should have accommodation for a hide and skin market, which would be used one day a-week for a horse market, for melting fat, for dressing entrails, and so forth, and for other obnoxious trades; this would afford great facilities to persons transacting the whole of that kind of business without being any kind of in-

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convenience to anybody. I have a site in my mind that I think would do well as to locality and be co-extensive as to size with the demands, whatever they might be, affording space for all the purposes, lairs, markets, slaughterhouses, and other buildings, leaving space near each, so that if at any future time the stock increased, or supposing they wanted more slaughterhouses, or they wanted in any way to increase the business, then the increased accommodation might be gained by adding to the buildings or markets you may happen to want. I am in no way interested, not in the slightest degree. I do not know who the property belongs to that I am about to name. I do not know any individual who is at all interested either in the site or in the neighbourhood; but I will now point the attention of the Commissioners at once to the site which rises towards the north, where you may have an area to any extent that you can reasonably require for those purposes, it is as if it were formed by nature for the purposes that I have been describing. Its situation would ensure one very great and important object, which is this, that the sewage, instead of adding to the difficulties which at present exist, by coming southward or towards the Thames, might be directed towards the north, and used up for agricultural purposes, and I have no doubt there are companies that would be found glad enough to take the sewage and to disinfect it, and use it for such agricultural purposes. The whole of the sweepings and filth of the markets and slaughterhouses might be conducted away in its fresh state without any inconvenience or any nuisance either to the neighbourhood or to any passers by. There would necessarily be many avenues and approaches required, and proper arrangement would be very important for the prevention of all kinds of collisions of the cattle, or stock, or of the carts and waggons, and so forth. It must be borne in mind that they should be *planned and arranged with very great care*, and I firmly and most conscientiously believe, that all that I am saying may be carried out without difficulty, to great public advantage. A most important acquisition could be embraced by using the frontage of those streets that would be formed, to make avenues and approaches to the markets, for the purpose of giving good and comfortable dwelling-places to the working classes. You might have a considerable number of dwellings that would be convenient to a great many of those people on account of the locality, which would be the means of meeting that great desire which is manifested by the public, for relieving the circumstances of those persons touching their dwellings.

140. What is the site you refer to?—I do not even know for certain, whether I am right in designating it the Copenhagen Fields, but, at all events, it is the rising ground that you see from the Model Prison, at the back toward the north and to the north-east of the Model Prison. This particular locality, of all others, would receive, with the least possible inconvenience to the public, all the stock that comes from those various railways, the Great Western, the Great Northern, the London and North-Western, and the Eastern Counties. I think a great portion of the stock coming up by those railways would be received into that market without any inconvenience to anybody.

141. What area do you think would be necessary or expedient for such a system of markets as you contemplate?—I should say it would be expedient to take a large quantity of land, at least twice as much as you would contemplate from the plans, in order that you might use up, for all those beneficial purposes for markets, &c. &c. &c., as much as you wanted, and underlet the other land at ground rents for the purposes that I have been speaking of. I think that there would be no difficulty whatever in procuring the whole, under an Act of Parliament, but it happens to be the case, and it is a circumstance of great importance, that if the markets were built there they would be no nuisance or annoyance to any one. There are very few houses indeed in the whole neighbourhood, and it is as if the place were left almost for the purpose. I was not aware that there was such a place, till in looking about that neighbourhood for a proper site, I found this place.

142. Do you speak of a locality to the east or to the west of the Great Northern Railway?—I do not know. It is between Camden Town and Holloway.

143. Are you aware that the comprehensive plan which you have now described, is in its main features, at least, the plan upon which the meat supply is effected to almost every large metropolis upon the Continent of Europe?—There are exceptions; they slaughter there everything, and upon that subject I would merely say *at present*, that it is so important and so tender a subject with a great many people who have vested interests in property, that I think it would not be desirable to make that compulsory on any account, and I think it would not be necessary to do so. This would become a favourite place, and a great many persons would be glad enough to slaughter there, because, if the dead-meat market is in the immediate proximity to the cattle market, when the purchaser goes to buy at the dead market—having previously killed his ox there the day before—he will take away a side of beef or a bullock, and perhaps he may supersede the necessity of having a slaughterhouse of his own; but I would not make that compulsory.

144. What quantity of land would be wanted for the site?—I would rather have 200 acres than 100, and it could be used most advantageously and remuneratively; but, if objected to, less will do, but not be so productive of revenue.

145. Could you have 200 acres at the spot you have mentioned?—Yes; but I believe 100 acres would do, as I have said before, but not be so productive.

146. How would you provide the funds for purchasing this area?—I am afraid that by some persons I should be thought quite Utopian, and charged with introducing a plan that would be so costly that it would be ridiculous to think of it; but my humble opinion and belief is this, that the whole may be made a remunerative plan. I think, more especially, if you adopt the whole of my plan, and have the buildings for the working classes, and the ground-rents coming in from them, to add to other sources of income

which I will now name, I think there would be a balance left after a series of years, which, when the interest and the principal shall have been paid, would be very worthy of the attention of the Chancellor of the Exchequer himself.

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147. Is it your view that the tolls from the markets, and the revenue from those indirect sources would be sufficient to cover the cost of the purchase of the site?—Yes. There are several items as heads of income. There are the tolls of the cattle market; there is the income from the lairage, because if you give ample accommodation to the owners to the stock, they will not grudge you a fair remunerating price for that great accommodation in the care that would be taken of the stock. We always find that men are quite ready, if they receive a benefit, to acknowledge it in a willingness to pay for it. In addition to the tolls and lairage there is the slaughtering department; there would be a revenue coming in from that; then there is the wholesale meat market, the rents of shops, besides which there would be a very large income from the ground-rents of the buildings for the working classes; and I believe that in the result it would leave a large surplus revenue.

148. Would you propose that the plan should be executed by the Government at the public expense?—Upon that subject, which I have deeply considered, I am satisfied that the trade of butchers would be too happy to leave or intrust that or anything pertaining to the markets to the care of the authorities of the City. But in order that all parties should have the most ample and the largest amount possible of security and guarantee that they could have, I should say by all means let it be carried out by a working Commission of the Government; but I am most anxious that that should not be until the Government have conferred with the City and made equitable, fair, and proper arrangements, having the consent of the City, and all parties going hand-and-hand, and being agreeable to the plan, so as to do no violence to the City, and not to interfere on any account with the vested interests and prescriptive rights which the City have in those markets without compensation.

149. But you would prefer its being carried out, under an Act of Parliament, as a Government measure?—To all intents and purposes. I am afraid I shall get smiled at by parties who have not given much consideration to the subject; but I am quite prepared to bear that, believing as I do, after mature consideration, that the plan which I have proposed to this honourable Commission is of very great importance; and if they should think so, and it should be worked out, I believe it will be a great public benefit, and that all parties and persons connected with the trade would be satisfied with it, and receive immense benefit from it. With respect to the different interests that will be menaced by removing these markets, I see no difficulty whatever in arranging amicably and equitably with all such persons, after the manner and in the spirit and disposition which I have thrown out in my remarks touching the way in which I should wish to see the City of London treated.

150. Upon the subject of slaughterhouses, what arrangement would you make for slaughtering animals in connexion with your projected market?—There are two ways which I would suggest: one would be to form them into compartments, and let them directly to the butchers. But I should very much prefer that the whole thing should be under the same authority and management, namely, a working Commission of the Government. It may appear very strange, but there is no difficulty in the management and ordering and conduct of a slaughtering-house any more than there is in the management and conduct of a market, nay, not by any means so much. There are many minute and important details to be filled up in the formation of a market, in its arrangement, in the avenues and approaches, and in all particulars relating to the subject; and in all those things it requires practical men to work it out; and unless it is done by the aid and assistance of practical persons, it cannot be carried out beneficially.

151. You would establish slaughterhouses in the neighbourhood of the market, to which the public would have access?—Yes.

152. Would you have fixed fees to be charged for slaughtering in those slaughterhouses?—Yes, after being well digested. It is a subject that requires great consideration.

153. Would you interfere at all with the right of the butchers to slaughter upon their own premises, or would you leave the law in that respect as it is at present?—I hope under no circumstances you will attempt to interfere with that at present. Supposing it was ever so desirable in the end, at present, in my humble opinion, it would be injurious. We are not ripe for it; we are not prepared for it. Let the butcher see another order of things existing, and I have no doubt there will be found a great many persons who will be willing to use your lairs and your slaughterhouses, instead of the lairs and the slaughterhouses which they now use. The parks are our lairs for sheep at present to a very large extent. There are many hundreds together, and every time any sheep are wanted, ever so few, the whole lot is driven about, and there is great trouble and inconvenience in consequence; but in the lairs I propose, you should have everything arranged to the satisfaction of all parties using them.

154. Do you think the butchers would slaughter at a great distance from their own shops, if they had the alternative of slaughtering upon their own premises?—There are some that would, particularly those that have bad slaughterhouses; they would attend daily at the dead-meat market, and having their cart and horse there, they would bring their meat away, and it would be no additional inconvenience to them, but you cannot make them believe that at the present moment, and I believe that all the power that the press have, could not persuade them that their interest is involved in it at the present time; but I think, when they see the thing at work, there are a great many of them who will be glad to avail themselves of the privilege.

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155. Do you think that it would not increase the price of meat?—Not a fraction that I could define.

156. Do you conceive that a butcher who sends an animal to be slaughtered at a public slaughterhouse has any effectual security that he receives back the identical carcass which he sends?—If in a common slaughterhouse they leave everything in the charge of the owner of the slaughterhouse, with a mere mark upon the carcass, where they insert the initials of their name, generally upon the brisket or thin flank of beef. If they leave the carcasses in such hands as those, how much more security would there be in the hands of the subordinates of such an authority as I speak of, that they would have their own.

157. You do not think there is any danger of a butcher, who sends a live animal to a public slaughterhouse, getting back the carcass of another animal?—Not the least in the world.

158. If the butchers should continue to slaughter upon their own premises, would not the practice of driving the cattle through the streets continue?—I have no hesitation in saying that to some extent it must continue, but you may limit the hours of driving in summer to nine o'clock in the morning, and in winter to an hour later. With respect to sheep, the majority of the sheep coming to the butchers may be brought home alive in carts and vans, and not be allowed to traverse the streets at all, except at the early hours before named. I have for a long time past had my lambs brought home from Smithfield in carts.

159. Are you in the habit of going through Cheapside and Newgate-street occasionally?—Yes.

160. Do you see many stoppages there?—I must acknowledge that there are stoppages. If a butcher wanted sheep for slaughtering purposes, after the limited hour in the morning, he might have them brought home in a cart. There is another class, consisting of stock sheep, which are bought for grazing purposes—sheep that merely pass through this market as a transit market, and which of course it would be out of the question to talk of conveying those in carts, but they might be subjected to the limited hours in traversing the streets, especially as they could have good lairage till the next morning, and they would be, after the fatigue of the market, refreshed, and more fit to travel; and, moreover, they might be confined to certain lines of road that would be least inconvenient to the public; but I am satisfied that, as regards the butcher, any sheep that he wanted for slaughtering he could have carted home the next day, unless he preferred driving them at early hours the next day. His drover comes to him for orders, and says, "What sheep will you have home, Sir?" He says, "Cart me (or drive) home 20 or 30 the following morning."

161. Will not that increase the expense?—That is the point. The benefit to me as a butcher, in the care that would be taken of the animals would be such, that were I to go to ten times the expense, I should be a gainer by it.

162. Would you let every butcher possess a slaughterhouse, or should they be licensed?—I am very jealous of licensing. I must admit that I should be sorry to see the system introduced, unless it was absolutely necessary; anything that is in any shape or degree un-English, as that is considered to be; but that an inspection should be made, to see that a slaughterhouse is a fit and proper place, above ground, and not below under any circumstances whatever, and that it is a fit place for the purpose; where the public shall not be annoyed. I think such a kind of inspection, no reasonable man can possibly object to.

163. What objection do you see to a license for slaughterhouses similar to that which now exists for public houses?—I should be very unhappy, if I were a party to such an arrangement. I cannot at all fall in with the views of any persons who may think that that will ever be (I was going to say) tolerated, at least without a great deal of dissatisfaction, and I humbly conceive that there is no necessity for any inspection, but to prevent improper places being used.

164. What power would you give to the Inspector, supposing he found that a slaughterhouse was a nuisance to the neighbourhood?—To report to his superior.

165. What would his superior do?—The superior having power by Act of Parliament, could prevent the man from using it as a slaughterhouse; if it was an unfit and improper place; by all means forbid the use of it.

166. Does not that amount to what you objected to, namely, the lodging somewhere a discretionary power of suppressing an improper slaughterhouse?—Let them be suppressed, but do not put every one to the necessity of being licensed.

167. You would prohibit all underground slaughterhouses at once?—Certainly.

168. As regards the expense of the transport of sheep, for example, taking the case of a butcher in Newport market, who may kill, say, 12 sheep a-week, would it be more expensive to him to pay a drover for driving the sheep from such a locality as you have contemplated, to Newport market, to be there killed, or to bring the carcasses of the sheep killed at the locality which you have in view, by cart or van to Newport market?—The carting would be fractionally more, but so insignificant in amount, as not to be worth being taken exception to by the trader.

169. If he drives the entire animal to Newport market he has then to get rid of the hide, the offal, and those parts which he does not sell to his customers for food?—Those things are always sent for to his house by the skin or hide salesmen. But if the sheep walk to his house, they would come with the proportionate deterioration upon them that they would be subject to from taking their chance of what damage they might receive in going through the streets.

170. Might not the carcasses receive a little damage in the way you described in the

packing?—They might be subjected to that, to a trifling extent; but if that happened, I should say to my servant, "This must not take place again," and it would be remedied immediately.

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171. Supposing that a market was established, such as you contemplate, that the charges were sufficient to remunerate the undertakers, whoever they might be, for their outlay, and that the tolls and fees were arranged so as to produce a profit upon the original capital, do you think that a butcher resorting to the market, would be able to sell his meat to the public in London, as cheap as he does at present?—I think the charge to the butcher would be insignificantly more than the present charges that he is subject to at Smithfield market. I think that the stock would be driven to his house at the same price, whether per score of sheep or bullocks per head. I think the difference of distance would be so little, that no extra charge would be made by the drovers; that is to say, the butcher would pay the same price for coming from the site that I have spoken of as for coming from Smithfield. I do not see that it will affect him to any extent worthy of complaint. The tolls and lairage would be paid by the grazier; and judging from what I know of mankind, I should say it would be paid as cheerfully as any money he lays out, because you render him fourfold or tenfold benefit for it in the care of his stock. The best thing that could be done for the grazier to prevent the present damage and loss, and for the owner of the meat consigned to Newgate market, would be the providing fit and proper places to accommodate the stock.

172. Upon the whole, as regards the profits of his trade, do you think that the butcher would be a gainer or a loser by the change which you contemplate?—I think he would be a very great gainer by having all his stock in a fit and proper state to sell to his customers.

173. On the whole he would be a considerable gainer, although he might pay a fraction more?—On the whole he would be a considerable gainer decidedly, having a preponderating benefit.

174. Have you taken into account the number of conveyances that would be required to attend the market to convey the meat to the customers?—Respecting the dead meat, we should only be subject to the same ratio of expense as we are at Newgate market, taking distance into account: that instead of its being a mile and three-quarters, it may be two miles or two miles and a quarter, according to where the butcher lives; but in very few instances would it be a mile more, which is not to be taken into account when you are menaced with such fearful evils as are attached to Smithfield market, of which the public so loudly complain. They might be put to some trifling inconvenience, but they would have a new order of things, which would more than compensate them by the improved state in which the meat would be.

175. The question referred to street accommodation. Have you turned your mind to the increased accommodation that would be required in the shape of carts and waggons to convey the meat slaughtered in this new market, to the public?—I do not think I have completely made myself understood with respect to slaughter-houses in this new market. I should erect slaughter-houses, in the first instance, to accommodate the carcase butchers, that they may kill all their stock which is wanted to feed the wholesale meat market with carcase meat. I have said very little about the private slaughter-houses for the trade generally. I believe that that is a subject which will come for consideration as a rider to the plan (but I would not interfere with that at present), so as to obtain the sanction of the trade generally, because in making a very great change, it is a very difficult thing to get persons over to your way of thinking, though you may be right, and they may be wrong, but the prejudices will gradually disappear, as they find the benefits of the new arrangement.

176. You think that the butcher would be a gainer, because he would find that the whole of his animal was fit to send to his customers; that the grazier would be a gainer, because his animal would not be deteriorated, and that the public would not pay more?—I think so, and say so without any reserve.

177. Did you give evidence on the Islington Market Inquiry?—No; I was then acting as agent to the trade of butchers, and I had to examine the witnesses, &c.

178. You were of opinion at that time, that by an extension of Smithfield the inconvenience then experienced would be remedied?—Yes.

179. In 1828 you were examined?—Yes, in 1828 I was one of the complainants.

180. The change in your opinion with respect to Smithfield market since that time, has been brought about by seeing that the remedies then recommended, have failed in their effect?—They were effectual when we spoke of them in 1834. They are beginning to lose their effect in proportion to the great increase of stock that is brought to the market.

181. You think that although an increase of the area of Smithfield now would remedy for a time the evil that the public complain of, it would not be an ultimate remedy?—I do not think it would be a final remedy.

[Adjourned to Wednesday the 19th instant at 12 o'clock.]

WEDNESDAY, December 19, 1849.

December 19, 1849.

GEORGE CORNEWALL LEWIS, Esq., in the Chair.

Mr. T. Bonser.

Mr. Thomas Bonser, examined.

182. Are you a salesman in Newgate market?—Yes.

183. How long have you been in the habit of dealing in Newgate market?—I have been there 40 years within a few days. About 14 years as an assistant, and 26 on my own account as a salesman.

184. Will you describe the nature of your business?—It is entirely commission, and principally with country-killed meat; very little besides, except consignments of live-stock for me to slaughter and sell the carcasses.

185. Do you receive meat from different persons in the country?—Yes.

186. About what number of persons consign meat to you in the course of a week?—I could not tell that, but I suppose I do business for more persons than any other salesman in Newgate market. I mean with the butchers in the country who send the prime parts to London, in sirloins of beef, hind-quarters and legs of mutton; also the carcasses of beasts, sheep, lambs, calves, and pigs, and sundry joints.

187. Is Newgate market a daily market?—Yes.

188. What are the hours during which it is open?—I commence at four o'clock on Saturdays and Mondays, and at five o'clock on other days.

189. Does it remain open the whole day?—If the trade is pretty brisk, we get done at twelve or one o'clock, but in bad trades, as late as five and six; on Saturday, some salesmen keep open till mid-night.

190. Is there any regular hour for closing the market?—There is no time fixed.

191. May a shop be open the whole day?—Yes. Very little of Newgate market belongs to the Corporation; only just the centre of it; the greater part of the business is done on private property not belonging to the Corporation.

192. Has Newgate market undergone any change in your recollection?—Very considerable. I was on the Markets Committee four years myself as connected with the Corporation.

193. What change has it undergone in that time?—The alterations were made previous to my being on the Markets Committee. The green market has been removed to Farringdon market, and some of the ground has been covered over and made suitable as shops for the salesmen; the poultry market also has been improved.

194. Has Newgate market been enlarged within your memory?—Not by the Corporation.

195. By whom has it been enlarged?—In fact it has not been enlarged in my recollection, for there is just the number of feet of ground belonging to the Corporation there always was; but the business of the market has increased to an extraordinary degree, and persons have been obliged to go out of the market, and take shops where they could get them, in the neighbouring courts, alleys, and streets.

196. Has the accommodation been enlarged in proportion to the enlargement of the business?—No. The Corporation could not enlarge Newgate market, because they had no ground, but they have made alterations as I stated. The principal part of the business of Newgate market now is carried on in shops unconnected with the Corporation.

197. Are they all under the jurisdiction of the Corporation?—I think not; for instance, in Newgate-street, Tyler's market, &c.

198. You have spoken of the existence of a Markets Committee, will you state what that Committee is?—There is what is called a Markets Committee of the Corporation appointed annually. Mr. Deputy Hicks was the chairman of that Committee several years.

199. Is there anybody that has any special jurisdiction over Newgate market?—The Markets Committee have.

200. Is there any officer appointed to have the peculiar care of Newgate market?—Yes, there is the collector of the rents and tolls of the Corporation, and the same officer is the Inspector of meat.

201. What is his name?—Robert Pocklington.

202. Is there a beadle of the market?—There are two beadles.

203. What are the duties of the beadles?—The duties of the beadles are to see that the waggons and carts come into the centre of the market, or rather to get as many in as they can, and to prevent others coming in when there is no more room. The space is very small; there is only one carriage-way into Newgate market (Hart-street); two carriages cannot meet, therefore the beadles have to watch or keep some one watching at the bottom of Hart-street, Warwick-lane, to prevent other carts or waggons from coming up till some of those in the market have unloaded, and leave the market. Hence there is very great difficulty and confusion for want of room.

204. Does that remark apply generally to the market, that there is want of room in it?—I am now speaking of the market belonging to the Corporation. I have said before, the greater part of the business is done out of the market, not upon the ground belonging to the Corporation, but in the streets and lanes leading to it.

205. Are you alluding to Tyler's market?—I have not yet referred to it; but that is a market that has sprung up in consequence of there not being sufficient room in the other.

206. Taking not only the portion of the market which belongs to the Corporation but also the private shops, is there adequate accommodation for the existing business?—There is not

adequate accommodation for the business of the market, and the difficulty in getting the waggons, vans, and carts to unload and load in the narrow avenues is very great. December 19, 1849.

207. Is the access to the market inconvenient?—Very much so, there is only one carriage-way, all the other avenues are foot-pavement passages. Mr. T. Bonser.

208. Supposing the meat has found its way into the market, is there sufficient room to unpack it and to display it for sale?—There is not sufficient room in the market for that certainly, and there is very great inconvenience attending it.

209. When the supplies are large, have you proper room to expose for sale all the meat consigned to you?—I have, because I occupy three shops.

210. But others have not?—I think not, but I would rather not answer for others.

211. They are obliged to put some of the meat on the ground or floor?—Occasionally, and sometimes to put it in the cellars for a few hours: this is for want of room.

212. Is the meat that is unsold and left for the next day placed in the interior of the shop?—At my place we have room to hang outside the shops a very great deal of meat in the open air all night. Mine is just as you enter Newgate market, from Newgate-street, and we have a great deal of room outside the three shops.

213. But is the place where it is put fit to keep it in a proper state?—It is with regard to meat that I have left unsold, except when it is left on Saturday, then there is a difficulty; we should not think of hanging meat out on Sunday, therefore that meat we are obliged to put in until Monday, and remains shut up all day on Sunday; on such occasions the meat takes damage.

214. Is much meat spoiled or damaged in warm weather?—I think, not so much on that account on my premises; but there is an immense quantity spoiled throughout the year: of that there is no doubt.

215. And there is great loss to the owners of the meat on those occasions?—Yes, very great indeed.

216. What is the effect upon the meat when large masses of it are crowded together in hot weather in bringing it to the market?—There is serious injury done to the meat, and great difficulty in getting the waggons and vans to the market to get the meat delivered adds to the injury.

217. What happens to the meat in consequence of that delay?—It is sometimes left till late in the day, and is sold at a lower price in consequence.

218. Is there a great quantity in the market which, when fresh, would sell at a fair price, but which, from being kept, is sold at a very low figure?—This often occurs in a bad trade, but if we have a brisk trade, no matter what quantity the salesman has, he can unpack as fast as he can sell and clear away. If there is not a demand for it it remains unsold, and in extreme hot weather the owner sustains severe loss.

219. Taking the average of the year, is the quantity of damaged meat from not being sold and kept back considerable?—Yes, in hot weather particularly.

220. Do you attribute that damage to the want of space in the market, or to the difficulty of selling it to the public?—It is attributable to both causes.

221. Do you think there would be nearly an equal quantity of damaged meat in the market if there were more accommodation?—If the waggons and vans could get into the market, meat would be delivered better; but now as they cannot all get into the market, they unload in Newgate-street, Warwick-lane, and the streets around, anywhere to get near; but if they could get into the market to deliver the meat quickly, it would frequently be sold better.

222. Is it not the practice of the carts and waggons to deliver the packages at some distance from the market, and then for the packages to be carried into the market?—Yes, when they cannot get near, but the bulk of the country meat is brought to Newgate market by Pickford, Chaplin and Horne, and the Eastern Counties Railway Company; therefore there are only three principal deliverers of meat. Beside the country light waggons, vans, and carts, there are others as well, but the former are the three principal parties who deliver the bulk of the country-killed meat.

223. To what description of persons is the meat that is stale sold, and for what purposes?—The butchers will themselves buy meat stale if it is sweet, and some of their customers prefer it. I have known butchers frequently come and ask for stale meat. I am speaking now of meat that has been kept as long as it could be kept to be good.

224. What is done with the meat which is not sweet?—That is sold to men to boil for cats'-meat and dogs'-meat, and for the fat.

225. If there were ample room and good ventilation, would not that save much meat from damage?—Undoubtedly it would, especially on a Sunday.

226. The alleys into the market have shops on both sides?—Yes.

227. Is meat hung up on either side the alleys outside the shops?—Yes.

228. The hampers are pitched into the alleys?—Yes, generally; but sometimes in the shops.

229. Do the buyers and sellers transact their business in the alleys?—Yes, and in the shops.

230. Are the shops very much crowded?—Very much, at times.

231. Has the supply of meat much increased during the last 10 years?—Very much indeed. When I first went into the market there were only 13 principal salesmen, and now I think I could find 200.

232. By what means has accommodation been found for so great an increase of number—Tyler's market has been referred to; that was the College of Physicians. Mr. Tyler, the

- December 19, 1849. brazier, purchased the property, and he uses part of it for his business, and has made the other part suitable for salesmen and butchers, and lets it out to them.
- Mr. T. Bonser. 233. Do you happen to know whether the parts which have been added to the market by private speculators enjoy any exclusive rights; or are they merely private shops which happen to adjoin the market?—They are private shops, and not within the City tollage.
234. Are there not tolls paid for every hamper of meat, every bundle of meat, and every pack of meat sold in Newgate market?—The Corporation have a right to take toll upon every package, by an ancient law, in their own market; but it has generally been arranged by the Markets Committee with the persons liable, and paid weekly. The Corporation has taken something fixed rather than count the packs. But I am speaking of Newgate market only, which belongs to the Corporation. Tyler's market, I believe, pays no toll.
235. Is your shop in the part of the market which belongs to the Corporation?—No.
236. Is any toll paid for the meat which is sold in your shop?—Not now; it used to be.
237. What is the reason why toll used to be paid and is no longer paid?—When I commenced business, it was in the market, and then I paid toll; I was there but a short time, and then removed to the premises I now occupy. I objected to pay toll, because I then said I was not on City ground. During the four years I was on the Markets Committee they agitated the question of tolls. The law officers of the Corporation were consulted, and gave it as their opinion, that every one who transacted business of the market, although not in the market, was liable to toll the same as though they were in the market. This was the expression, that those who refused to pay were depriving the lord of the market of his right by transacting the business of the market; and that, therefore, they were liable to pay the market tolls. In a friendly manner, the thing went on. In the Committee they said, "Well, Mr. Bonser, we shall commence an action and take you first." I said, "That is perfectly right that you should take me first as being on the Markets Committee; I will consult my neighbours, and let you know the result." I consulted them about it, and nearly all my neighbours in Rose-street agreed to pay a weekly sum, and at the next Committee I reported the result of my interview with my neighbours; but I said, "Now it is on condition that you make all the others pay toll likewise." After a few years I found that others were not paying toll. When the clerk of the market called upon me for the toll I said, "Give my compliments to the Committee, and tell them that I decline paying further toll, because others on private property do not pay: if they want to see me upon the subject, I will wait upon them;" and since that I have paid no toll.
238. Has the question ever been brought to a legal decision?—Not in my time.
239. Has the Corporation positively waived its claim?—Every year there are changes in the Committee: the subject is frequently brought up, but I have not heard that they have done anything decisive.
240. Has any claim for toll been recently made upon you, or upon persons similarly situated to yourself?—No, not that I have heard of.
241. Do you happen to know whether the question has recently been agitated in the Markets Committee?—I think it has.
242. Do you know what has been the result of that discussion?—I do not.
243. Has the introduction of steam communications by sea and by land had any effect upon business of Newgate market?—Very great.
244. What effect has it had?—I think there must be four times the quantity of meat brought from the country, or more.
245. Within what period?—Within 10 years.
246. Is dead meat now sent up from greater distances than it used to be sent before the present acceleration of traffic?—Yes. When I came to London we thought 80 or 90 miles a great distance. I think very little dead meat came 100 miles to Newgate market; now we get an immense quantity from Aberdeen, and from various parts of Scotland and England.
247. Did you ever hear of slaughtering in Yorkshire bad diseased cattle to be sent up to market here?—I have heard something said about it, but I cannot speak positively of any one person in particular.
248. But you have reason to believe that such is the case?—I know that we have had diseased meat sent to Newgate market for years, and that to a considerable extent.
249. Has the tract of country from which the supply is now derived to Newgate market been much increased of late years?—Very much since steam communication has become general.
250. Has the manner in which the metropolis is now supplied with meat had any effect in diminishing the number of live stock sent to Smithfield market?—I think the numbers of live cattle have increased also.
251. Do you think that the present means of communication from the country tend rather to increase the proportion of dead meat sent to London, and to diminish the proportion of live meat?—I think not. I do not think they tend to diminish the quantity of live meat, because we have so many country butchers who come to Smithfield market that we never saw years ago.
252. The question does not refer to the absolute quantity, but to the proportions of the supply sent to the two markets?—I expected that steam communication would throw a great deal of dead meat into our markets, and would throw less live into Smithfield, but I find that the quantity of live stock in Smithfield is increasing, and that I attribute to the butchers coming from the east, west, north, and south, and buying in Smithfield, and sending it into the country.
253. Do you think that the increase of live stock in Smithfield has been as great in proportion as the increase of dead meat in Newgate market?—I think not; but that information can easily be obtained, as to the number of cattle in Smithfield every market-day.

254. Supposing there were easy access to Newgate market, do you think that the absolute size of the present market would be sufficient?—Not that which belongs to the Corporation, by any means. December 19, 1849.
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255. But, adding to it the part which does not belong to the Corporation, do you think the accommodation would be sufficient?—I think not: to prove which, if a house is to be let in the vicinity, it would be sought after by the salesman. Any shop that is to let in the neighbourhood somebody applies for.

256. Have you ever heard of cases in which packages of meat have remained unpacked for a considerable time in consequence of the want of space?—I have heard of a case, this week, of meat being kept in Pickford's van two or three hours before it could get near to the market to unload.

257. Did you ever hear of instances of packages which had been delivered in the market remaining unpacked for want of room?—I have heard of such instances again and again. The meat is very often pitched into the market, and if the trade is very bad, and the salesman thinks that it will keep good till the next day, and that it will make a better price then, he will not touch it that day, but will keep it till the next day.

258. Are those parts of the market not paying tolls subjected to Mr. Pocklington's visitation?—Yes; but that is a late regulation of Sir James Duke's.

259. Does he inspect the meat in Tyler's market, for example?—Yes.

260. Is there not considerable confusion in the market during the busy time?—Yes; but we do not care how much bustle there is.

261. Is the bustle not sufficient to prevent the ready sale of the meat?—No; the confusion in the market arises from the want of space, and also for the want of passages to get the meat into the market. There is great confusion also arising from there being only one carriage-way into the market, and that is one where two carts cannot pass.

262. Is there room in the market itself for the customers and for the sellers?—In what we call the market, that is, including Newgate-street, and Warwick-lane, and Tyler's market, there is room for the persons of the buyers and sellers, but they are very much crowded, as I have said; but that which belongs to the Corporation is a very small space.

263. Do you think there is much facility for selling damaged meat in Newgate market?—not now.

264. Was there at any time?—I have no doubt there was some years ago; but when Mr. Alderman Thompson was Mayor, a gentleman on Ludgate-hill, the foreman of the inquest, had two or three persons summoned for selling unsound meat; by order of the sitting alderman, the meat was burnt and destroyed in Guildhall-yard. The salesmen in the market felt a good deal of difficulty as to how they should act, as, if a bad piece of meat happened to be in a hamper with some good, they might be pounced upon as offenders, and taken before an alderman, the meat burnt, and a prosecution might follow. Mr. Deputy Hicks, Mr. King, Mr. Chandler, Mr. Harris, and myself waited upon Mr. Alderman Thomson to ask him what we should do. He asked, "Have you a clerk of the market?" "Yes." "Who is he?" "Mr. Fisher." "Is he a butcher?" "Yes." "Then let him be called in; if you have anything that is at all doubtful as to quality, let the clerk of the market be called in, and if he passes it as fit for human food, that will be your guarantee to sell it. If he condemns it, let him take it away and destroy it, and do not let us have it burnt in Guildhall-yard." He gave him, Mr. Fisher, authority to that effect; we adopted the Lord Mayor's advice, and that relieved us. I believe the salesmen in the market, or at least most of them, would not sell meat for human food that they thought ought not to be sold for that purpose. The thing went on in that way till Fisher's death. Mr. Fisher often regretted that he had no authority to go into Tyler's market nor Warwick-lane. After Mr. Fisher's death, Kentish, the head beadle, a steady respectable man, performed this duty till Mr. Pocklington was appointed. Sir James Duke, then Lord Mayor, interposed, and gave Mr. Pocklington power to go to Tyler's market and the adjacent streets, courts, and alleys, and I believe now the difficulty is over.

265. Do you think the inspection by Mr. Pocklington is sufficient?—Yes, for Newgate market and its vicinity.

266. Is his inspection an effectual security against the sale of unwholesome meat?—If he does his duty, as I believe he does.

267. By whom is the clerk of the market appointed?—By the Corporation.

268. Not by the Markets Committee?—No; the Corporation elect him annually.

269. Do you believe, in point of fact, that very little unwholesome or damaged meat is sold in Newgate market?—I do not think any is now.

270. Do you happen to know whether facilities exist generally of disposing of damaged meat in London?—I do not, but my attention has been chiefly confined to Newgate market; but allow me to say, that I think that damaged meat could not come into the City of London now without being found out. Mr. Fisher, an efficient person, who was appointed by Sir James Duke when lord mayor, has seized several bodies of beef at Whitechapel and other places; he watches for the waggons coming into the City.

271. Can you give the Commissioners any suggestion for the improvement of Newgate market, and rendering it more efficient for its purpose?—Enlargement.

272. Would you enlarge the existing site, or would you select a new site?—That is a question I can hardly answer; we want room very much indeed. Newgate-street is very much crowded. We want more room in the market; the vans are obliged to be unloaded in Newgate-street on account of there not being room in the market for them, and from there being only one carriage-way, the difficulty is very great.

273. Which course would you prefer, enlarging the present market, or taking a new site in a convenient place?—I am not prepared to give an opinion upon that. I have been located

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there nearly 40 years, and should not like to leave the old place if I can help it, and I would rather not give an opinion. I should rather leave it with others.

274. Do you think one or other of those two alternatives desirable?—I think one of them desirable, certainly.

275. Do you consider it to be an advantage to Newgate market, its being close to Smithfield market?—Yes, very great.

276. In your judgment is it important that the principal dead-meat market of the metropolis should be in the immediate neighbourhood of the principal live-stock market?—It is important, but I do not think it is absolutely necessary; but I am a wholesale salesman, and not so competent to answer this question as a retail butcher, who attend both markets.

277. Why do you consider it important?—Because the butchers that go to Smithfield can come to Newgate market at the same time with less expense, and they like to attend both markets.

278. Is it convenient to them to attend both markets about the same time, that is to say, do they go from the one direct to the other?—Yes; but some that attend Smithfield market never come to Newgate market. There are some butchers doing a good deal of business in London that we never see at Newgate market; but many go to both. Butchers coming from the country on Monday to buy things alive in Smithfield market, come to us to buy hind-quarters of beef and mutton, and the prime parts of everything in cold weather, enough for the week.

279. Do many persons attend Newgate that do not attend Smithfield?—Of course, many of the smaller butchers do not buy anything alive, and some persons even doing a large trade buy nothing alive.

280. Then your opinion is, that it is convenient to the trade that those two markets should be near one another, but by no means absolutely necessary?—As I have said before, the retail butchers are the best judges of that; there is only one principal live market in the week, viz., Monday. Friday is a sort of bye market; there is very little there on Friday, except in the summer, when there is a good deal of business done there. Supposing the markets were apart, it would not be much inconvenience for the butchers to drive a short distance from one market to the other.

281. Are there any other markets important for the sale of meat besides Newgate?—Leadenhall, I believe, but I am not aware what they are doing there. Leadenhall has always been a place for country meat, I believe.

282. Is a portion of Newgate market used as a poultry market?—Yes.

283. How large a part?—I think there are not more than fifteen shops in it; it is a very small place.

284. Would it be convenient to the salesmen of meat to be relieved from the presence of the poultry sellers?—It would be convenient for them to have the room, but it would be a removal of some of our customers at the same time; for many that buy poultry, buy pork. We should like their room, but we want their custom.

285. Would increased space remove much of the difficulty without an improved access to the market?—I think not.

286. Has the difficulty of adequate access to Newgate market occasioned much obstruction to trade and commerce through Cheapside?—I am unable to answer that, as I am seldom in Cheapside during market hours.

287. You slaughter sheep at Newgate market?—Yes, when they are sent to us to slaughter; but I never purchase anything alive; some of the salesmen do, and to a considerable extent.

288. Is your slaughter-house under ground?—For sheep it is.

289. Will you tell the Commissioners the way in which those sheep are put into the cellar?—Down the steps.

290. How long have you ever known sheep to be kept there?—Never more than a night; and I do not think any man who had any regard for his property would keep them there even one night; they would be injured very much by being kept there one night.

291. You have never known of their being kept there two days?—I never heard of any being kept there more than a night, and then but a very small number. If many were crowded together in a cellar, the effect would be seen immediately the sheep were slaughtered.

292. Can you say how many sheep are slaughtered in a week in Newgate market?—No; but I think not very many now.

293. About what number?—I could not say, but I think nothing like what there used to be before the country-killed meat became so abundant.

294. What is the size of the cellar in which the sheep are slaughtered under your shop?—It may be about twice the size of this room.

295. Is it kept clean?—Very clean.

296. Is there a good drainage from it?—Yes.

297. Does any disagreeable smell arise from it in summer?—Never.

298. Do you believe that the practice of slaughtering sheep under your shop at all injures the quality of the meat in the shop?—Not in the least.

299. How many sheep do you slaughter on an average in the week?—Sometimes we have not had anything for months in the winter time; what we have is generally in summer, when our senders of dead meat do not like to send it on account of the warm weather, and then they send it alive. Perhaps we may kill sometimes from 60 to 100, and then only occasionally.

300. Do you slaughter any animals besides sheep?—When we have oxen, we send them to a suitable slaughter-house.

301. Do you ever slaughter calves?—We send them to a calve slaughter-house.

302. Do you ever slaughter pigs?—We send them to a pig slaughter-house. We send our

oxen to "The Ram," in Smithfield, the calves to a calf-butcher's in Warwick-lane—every man to his trade; and the pigs to Cow-cross. We have a great number of pigs in the season, sent from Scotland alive.

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303. You say that the practice of slaughtering sheep under the shops in Newgate market has been diminished of late years?—Very much, I think.

304. Do you see any objection to its being wholly discontinued?—Not as far as I am concerned.

305. Would it be inconvenient to the trade to be debarred from the liberty of slaughtering under their shops?—Not if they had other places to kill them in, except that the cellar would be useless. Some have taken their places with a view to slaughtering sheep, and their cellars would be useless for anything else.

306. The whole of the slush and drainage from the slaughtering goes into the sewers?—Entirely in my place, which is trapped, and an abundance of water washes all the filth away, so that no gentleman would be offended by going there at any time.

307. Do you know whether the practice of slaughtering in the cellars at Newgate market has been complained of in the neighbourhood?—It has, I have no doubt, and there has been cause of complaint; but, I think now, we shall do justice to all parties, by saying that they have been more careful; there is no occasion for there being anything unpleasant in slaughtering if the offal is taken away immediately, and everything is washed away. I think the slaughtering cattle contributes more to health than otherwise, if everything is cleared away afterwards. I think there is not a more healthy spot in London than Newgate market or Smithfield.

308. What is the distance from your shop of the slaughter-house for beasts that you employ?—It is in Smithfield. The cattle do not come to Newgate market at all. They are taken from the railway terminus, the wharves, or wherever they may be brought to, by steam direct to the yard where the slaughter-house is.

309. How do you get the carcasses brought to your shop from the slaughter-house?—By the slaughtermen, in carts.

310. Do you find that you have to complain of the bruising or crushing of the meat in carrying it by carts from the slaughter-house to your shop?—No.

311. What is the distance that it is carried?—Not a quarter of a mile.

312. Supposing it were carried a mile, do you suppose that if it were carried with the same care it would suffer from that mode of transport?—Not at all.

313. You gave a decided opinion about the healthiness of Smithfield and Newgate market?—Yes; that is my opinion.

314. Have you been always resident there?—No: I lived in Northampton-square 14 years, and I lived at Merton, in Surrey, 6 or 7 years, but the other portion of the time I have lived in Newgate market.

315. But you speak from 40 years' experience, and that during that period you have been in the market from four o'clock in the morning till one?—As I have said, I commence business at four o'clock on Saturdays and Mondays, and at five on other mornings regularly. The markets are getting rather later than they used to be.

316. Are you aware of any fearfully bad smells during close wet weather in the market?—Yes, we have had them; but I think that is entirely the fault of the persons who belong to the premises.

317. Your premises are remarkably good; but are there not other premises which must be very close from the want of ventilation?—There are, certainly.

318. What do you pay your slaughterman for slaughtering beasts?—I think it is 3s. a-bullock.

319. Has he the offal into the bargain?—Not anything.

320. How do you dispose of the offal?—The entrails go to the tripeman, other parts of the offal, such as the head, tongue, hide, heart, tail, and fat are brought to the market to be sold.

321. You mentioned that the markets are later now than they used to be; can you suggest any means by which the period of the market could be shortened without inconvenience to the trade?—No; because I think the Corporation have not power to interfere with us, who are not their tenants. If the Corporation had the market entirely in their own hands, they could interfere and very much relieve us on that subject.

322. Do you think it desirable that the Corporation should have the power of regulating the hours of the market?—Yes.

323. Do you think it desirable that they should exercise that particular power?—If they had it, I think it would be well to exercise it, the same as they do over Smithfield.

324. Can you suggest any mode by which the hours could be shortened? Would you begin earlier, or would you compel parties to leave off earlier? Could that be done without inconvenience to the trade?—I think it could in some measure. The lateness of the market arises from the butchers being able to come at any hour to buy. If they knew that the market was closed at a certain time, they would transact their business earlier, we should close our shops earlier, and that would be to us a great convenience.

325. In the earlier days of the week, are not the avenues to Newgate market so encumbered that it is difficult to get out with carts?—The difficulty is in getting the meat there, and in getting it away; the butchers have their carts in the neighbouring streets, and the men carry the meat on their shoulders to the carts; but it is important that when a man has a cart full that he should be able to get away with it, which I believe they cannot for a considerable time.

326. Can you suggest at what hours the market should be required to begin and to be closed?—I should say, that four or five o'clock would be well to begin, and that it ought to

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327. Is there any other remark or suggestion which you would wish to offer to the Commissioners?—I look upon the subject as such a mighty question, that I am confounded when I think of it, because I do not see what can be done. To remove Newgate market altogether, or to enlarge it sufficiently for its increasing business, would be to some a most serious matter. I do not think it would injure me in the least. I think it might benefit me, and I am sure it would my employers. And if I, having superior premises, should reap an advantage, how much more those whose premises are so much more confined. I think, also, it would be a particular benefit to those who are not tenants of the Corporation, and who are obliged to pay enormous rents. I should like to be a tenant of the Corporation, but they have no accommodation for me.

328. That remark applies to private shops, the occupiers of which are compelled to pay heavy rents?—Yes.

329. Are the rents of the Corporation shops more moderate than the rents of the private shops?—Yes.

330. What is the reason of that difference?—Do not the Corporation take the full rent which they might obtain?—I dare say that if they were to turn out their old tenants, and re-let the shops, they might have larger rents.

331. Supposing a shop belonging to the Corporation becomes vacant, is the rent raised?—There is a notice put up, that this shop is to let; and it is let by tender. These shops are all very small.

332. Supposing there to be no possibility of increasing sufficiently the size of Newgate market upon the present site, would it be inconvenient if it were moved a short distance?—I think not, if it was about the centre of London. If you should remove Smithfield market (which I hope you will not), you might make a good Newgate market there.

333. Are you of opinion, that a dead-meat market is essential to the public interest in the city of London although Smithfield market might be removed to a considerable distance from it?—I think it is all-important that there should be a dead-meat market in the centre of London.

334. Similar to Newgate market?—Yes.

[The Witness withdrew.]

Mr. B. Venables.

Mr. Benjamin Venables, examined.

335. Are you engaged in trade as a salesman in Newgate market?—As a commission meat salesman.

336. What is the nature of your business?—To receive consignments of country-killed meat from all quarters.

337. How long have you been in your present business?—About 15 years.

338. Are you well acquainted with the course of dealing in Newgate market?—Yes.

339. And with the market itself?—And with the market itself.

340. Will you tell the Commissioners whether you think that the accommodations of the market are satisfactory?—They are not to me and the trade in general.

341. What objection do you make to them?—I have not sufficient room to transact my business.

342. What is the size of your shop?—It is rather difficult for me to state the exact size. I am a tenant under the City, and my shop is, I think, as large as any one in the market.

343. Does the want of room arise from the smallness of your shop, or from the narrowness of the passages in the neighbourhood?—The general want of accommodation through the market for the trade, and also for transacting my own business.

344. Is there a want of space for the customers?—We do not mind how close we get our customers together, but we do not like to get our meat confined in so small a compass, as it does not give the buyer so fair an opportunity of seeing the article. Often I have several hundred sheep hanging in my shop, and I can only expose a certain quantity for sale because we have two rows of rails, therefore the under row cannot be seen when the top rail is filled with sheep or beef, no room being left to separate them. The meat that is put upon the top rail will not allow the under meat to be sold. Therefore, if we had more accommodation it would expedite the business altogether.

345. Is much of the meat obliged to be placed on the floor?—It is occasionally.

346. Have you sufficient space for unloading, and stowing away, and exhibiting your meat?—No, we have nothing like sufficient.

347. Is the accommodation for unloading the meat insufficient?—Quite so.

348. Will you describe the process of unloading it from the carts?—I have known 27 waggons of meat to arrive from the Eastern Counties Railway in the morning. I have known 14 waggons to arrive from Chaplin and Horne's, from the different railways they are connected with. I have known 10 of Pickford's to arrive from the different railways they are connected with. Those are, I may say, the major carriers; but there are several others, and we have also a few country waggons; those country waggons take up great space. I have known it happen, that while one or two waggons of the Eastern Counties have been unloaded, there are others loaded standing in Cheapside, and Pickford's standing near the Old Bailey, and I have also known Chaplin and Horne's to be standing at a distance. The space in the centre of our market is so small that it will not allow more than six waggons and four carcass-butcher's carts to be unloaded at a time. Now the position I am placed in is this; my meat may be

upon the last waggon that leaves the railway station; when the meat comes from the nearest station to London, it is in the last delivery, being the last truck of the train. It is then put upon the waggon, and through the want of space it must remain for some time to the deterioration of my sender's property; therefore I have not an opportunity of disposing of that meat on account of the insufficiency of the space afforded for unloading to such advantage as I can of the meat which arrives first in the market. It is not the delay of the train, but the narrowness of the space in which we are compressed.

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349. The space will only hold six waggons and four carcass-butchers' carts, and you have sometimes 50?—I consider that our market will not hold more than the six waggons and four carts, to unload, but there are other localities where they unload, such as Newgate-street, but there the facilities are very limited.

350. Then if there was a better access to and from the market, so that the waggons could be easily drawn off, it would give great facility to the trade?—Certainly it would, because as the waggons come in now to be unloaded, the others must wait till these waggons can go out again, as at present the ingress and egress is the same for all waggons and carts.

351. But from the actual size of the market, it is scarcely possible to have two channels, one for arrival and the other for departure?—There is not space sufficient at present to make an ingress and egress, but that difficulty could soon be overcome.

352. Does it often happen that carts are unloaded a little distance from the market, and the packages brought on men's shoulders to the shops?—Yes.

353. Is there any inconvenience in that practice?—The only particular inconvenience is the extra labour and delay.

354. If there were a good ingress and egress, would not that be, to a certain extent, a remedy for what you complain of?—Decidedly it would. If there were an ingress and egress, it would be impossible for the Eastern Counties, and other railway carriers, to place on more strength than they do at present, because now they cannot work their strength, but if we had an ingress and egress, it would very much facilitate the delivery of the meat.

355. Does it often happen that packages of meat remain unpacked a considerable time?—It does happen so sometimes.

356. Do they remain in the cart, or do they remain in the shop, or elsewhere?—Sometimes they remain in the shop.

357. To what is it owing that they remain unpacked?—It is a discretionary power which we use ourselves on a late delivery, as well as from want of space to hang them up. Sometimes our market is full, as for instance, last Saturday. It was an extremely wet morning, and the consequence was, that our supply was more than our demand, more especially at this season of the year, because although the butchers wish to make as respectable a show as they can, yet the meat being higher at this time of year than it is at other times, they endeavour to hold off for a day, so that in the event of a glut of meat, they may take advantage of it, because the price of meat is much higher than what some of their customers are being served at. There is often a greater supply for one day sent to the market than there is a demand for, and probably the next day's supply may be very deficient, therefore if we have more accommodation we should feel justified in not exposing and unpacking the whole of these goods, especially at this season of the year; it is not perishing weather. But as soon as our country meat is exposed to the atmosphere in damp weather, it looks unsightly to the eye, and prejudicial to the sender's interest, therefore it would be very beneficial if we had a place to deposit the article in,—not for the purpose of imposing on the buyer of it, or to make a great increase of price for our senders, but to equalize the price as near as we possibly can, to agree with market quotations, which is a guide to the sender. That would be to the interest of the sender and the purchaser, by giving an equal average, so that it would be a great acquisition, if we had room sufficient to hang up the packs, and deposit the hampers on such days as I before alluded, when the weather was extremely wet, because if the meat is taken home in such weather, and exposed in the carts, it looks much worse after the butcher gets it to his shop.

358. In bad weather, is not there often meat spoiled?—There is, in summer only.

359. What becomes of that meat?—It is condemned by the City authorities.

360. Is it always condemned?—Invariably: as soon as it becomes unfit for human food a respectable tradesman sends for the officer of the market, and says, "I have such-and-such meat that is not fit for human food, give me your order to say that it is condemned;" and he takes it away.

361. Are there not salesmen who let boards for people to sell other meat than their own?—We do not term them salesmen.

362. But such things are practised?—They may be practised at some shops.

363. But you do not believe that there are great facilities for the sale of bad meat?—No; there is no facility, because the eye of the officer is upon us from the first thing in the morning till the shops are closed.

364. Is vigilance strongly exercised to prevent the possibility of selling bad meat by any person?—I think it cannot be openly sold.

365. What happens to the meat that is condemned by the officer?—It is taken to Sharp's-alley, at Cow-cross, to the knackers, there, and the officer appointed by the Corporation there sees that it is boiled down.

366. Is it your opinion that the arrangements of Newgate market afford security against the sale of unwholesome or diseased meat?—Decidedly.

367. From your knowledge of the rules of the market, you feel satisfied that no quantity of unwholesome meat worth mentioning is sold there?—I am convinced there is none. I am invariably up at three or four o'clock in the morning; and I never leave my place of business till business is finished; and I am placed in a locality in which I can see very nearly 20 shops.

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368. At what hour do you leave your business?—My shop is closed about half-past one on Tuesdays, Wednesdays, and Thursdays; on Mondays I am invariably there till four or five; on Fridays till four or five; and on Saturdays, sometimes, till ten o'clock at night.

369. Do you slaughter below your premises?—Very little indeed—occasionally I do, but very rarely. The expedition with which we receive goods from the north of England and Scotland is so great, and they come in such beautiful condition, that there is scarcely any need for the slaughtering of cattle in the market.

370. Are the carcasses so sent much injured by transport by the railway?—I may receive 100 sheep from Edinburgh alive, and slaughter them, and I cannot make so much by a farthing to a halfpenny a pound of those that I receive alive as I can of those that I receive dead if the man is a judicious butcher, and a judicious packer; those being the main points.

371. Both coming from the same place?—Yes.

372. Then the injury of live cattle must take place in the transport by the railway?—Most decidedly. A short time since, I received large consignments of live stock from Aberdeen, as the butchers there are mostly jobbers of live cattle; and they often did send up, in the summer time, the live stock, because the steam-boat could not bring the dead meat quick enough; but as the line of railway has been opened almost to Aberdeen, and it is a line of daily communication, it is my impression the consignments of live stock will greatly diminish, and the dead meat will considerably increase in proportion.

373. Is it your opinion that it is for the interest of the owners of stock in the country to send it up to London dead rather than alive?—As the prejudice on the part of the public will wear away with time, the farmer and grazier, I have no doubt, will turn their attention by getting acquainted with the best mode of sending their stock to market dead; at present I do not expect to see very large consignments of dead meat direct from them, because it will be some time before they can make themselves acquainted with the practical part of the trade, such as slaughtering and packing the meat. It is from the carcass butcher established in their neighbourhood we shall expect to see the great increase of quantity; the saving in the rate of transit, and the difference in the weight, by being slaughtered in the country is quite 4d. in eight pounds; and in consequence, these men can be better customers to the man that makes the stock than he can make by forwarding them any distance to our live market, as he takes the responsibility when they are consigned alive, by their dying, or being thrown overboard in stress of weather, when they come by steam-boat, or being bruised and damaged when by rail. I feel convinced our market would bear any increase of its supplies if the article should be of a good quality, well butchered, and packed; for the country-killed meat has grown so much in repute with the trade and the West End consumers, since the establishment of railways, that they now give it the preference to anything they can purchase alive, and slaughter at home.

374. Are you speaking of bullocks entirely?—I am speaking of bullocks and sheep. It is on account of the transport and the mode in which they dress it. They are not so particular in some parts as we are in London in dressing the carcasses.

375. You were understood to say that you received sheep from Edinburgh, and that you get a better price for the dead sheep sent up in carcasses than you can for the live sheep?—So we do, because the hind-quarters of the sheep which are sent up dead make considerably more than the hind-quarters when they are killed in London. Therefore, upon the whole carcass I make more than I can make of a carcass that is killed in our market.

376. Do you think that the tendency of things at present is for the supply of dead meat to increase in London rather more in proportion than the supply of live meat?—I think the supply of dead meat will increase more in proportion, and that considerably, with proper facilities to transact our business.

377. Is it not, therefore, important that there should be an adequate market for the sale of dead meat?—I certainly consider so.

378. At present are the accommodations of Newgate market at all adequate to the supply?—I think, not at all; but they could easily be made so.

379. In what way would you recommend that they should be made so?—One way is by taking the poultry market, which is of minor importance, to Leadenhall. As the City are building a prison at Holloway for their prisoners that are now deposited in the Old Bailey, I think that they might apportion the greater part of the building for a thoroughfare and an extension of the market, also by taking under their control Mr. Tyler's market, and purchasing the Oxford Arms Inn, carrying a road direct from Farringdon-street to Cheapside, which will also relieve Newgate-street, and Ludgate-hill, and Paternoster-row. It is my opinion that all minor improvements entertained by the City will be quite useless with respect to the dead-meat markets, as it is my belief that the salesmen of Leadenhall and Whitechapel markets will be glad of the opportunity to avail themselves of premises in Newgate market, that being the most central; you will then at once do away with a great deal of the slaughtering of cattle in Whitechapel, and remove our poultry market to Leadenhall. After making these alterations (if practicable), see then how much more space is required for a live cattle market than at present, which it is my opinion will not require any alteration.

380. How much space would that set free?—I should think it would give five shops.

381. Would an addition of five shops be sufficient?—It would not; and in carrying out those five shops we still should not get a thoroughfare.

382. Does not a portion of the present market consist of private shops which are not within the limits of the market belonging to the City?—Yes, they are private property; I should almost say that they overbalanced the City property, taking in Mr. Tyler's market, which I consider might be purchased, which has not any way out for carts, and causes great obstructions in the leading thoroughfare to our market.

383. In speaking of the present market being inadequate, do you include that portion which

is private property and does not belong to the City?—Yes, it is inadequate on the ground of its bad ingress and egress. December 19, 1849.

384. Supposing the entrance into the market were enlarged, do you think that the size of the market is sufficient?—Yes, I think there could be quite sufficient accommodation provided by purchasing property which could be turned to much better account than it is at present.

Mr. B. Venables.

385. What do you apprehend in the last ten years has been the increase of the dead country meat that comes into Newgate market?—Much more than double; as I take into consideration that those parties who were in the habit of selling a great many things who gave their evidence in the year 1843, as carcass butchers, are retired from business. There was Charles Edwards, Thomas Harwood, and my father, who slaughtered a great quantity of live stock bought in Smithfield. These men are now retired from business, and their places have never been taken up; the carcass butcher now cannot compete with the country sender, and for this reason—the Scotchman is now himself a carcass butcher; the sender from Hull is a carcass butcher; the sender from Leeds is a carcass butcher; the sender from Norwich is a carcass butcher; the sender from Durham is a carcass butcher; and the sender from Newcastle is a carcass butcher. But at that time that was not the case anything like to the extent that it is now; therefore the trade that was carried on by men purchasing in Smithfield, and consigning their dead goods to Newgate market, is now very limited to what they were a few years back, as the trade has gone more into the country. There is great benefit derived from the slaughtering of cattle in the country, instead of sending them up alive to London, as I have before endeavoured to show. There are some parties in Edinburgh who are in the habit, I may almost say through the year, of sending up 500 or 600 sheep each weekly. Those sheep are divided between four or five different salesmen. Now, at the time when carcassing was carried on in Newgate market to its greatest extent, there were very few of the London carcass butchers that ever did that extent of business. Therefore the slaughtering has diminished very much in London, and, in my opinion, it will diminish more every year as the railways are extended. The superior mode which they are getting into of slaughtering the cattle in the country, and the pains they take to pack them to make only a small profit per head for themselves must, in a great measure, do away with a great deal of the slaughtering that is now carried on in London. They do their slaughtering on their own premises in the country. But a butcher feels great prejudice in sending his cattle to a common slaughterhouse in London, and justly so, as it is known so well in the trade the men employed there almost consider they have a right of pilfering; they do this with the greatest assurance; they have been known to conceal the fat about their person, and at other times concealing it with the dung at the bottom of the barrow. A common slaughterman is looked upon in the trade as an employment rather degrading, they invariably being morally bad. The owner of the property cannot be present at the slaughtering of his cattle the same as if it was conducted on his own premises, therefore he has not any check from being plundered.

386. Would that take place if the slaughter-houses were properly supervised and ordered?—They will even rob you while you are standing and looking over them.

387. Then you consider Newgate market as it at present exists to be totally inadequate as a dead-meat market?—For the business that is carried on there, and which is likely still to increase.

388. Are you aware of the position and the size of the Giltspur-street Compter?—I am not, but I should say that it stands on a greater area than those new shops in Newgate market are built on: that it stands upon almost as large a space as the City property in Newgate market.

389. You are aware of the situation?—Quite so.

390. It would afford very great facilities of access to Newgate market, would it not?—It would not.

391. Are you aware that the Corporation are building a new prison in lieu of that?—I am.

392. Do you consider it an advantage for Newgate market to be near Smithfield?—I do.

393. In what does the advantage consist?—In my opinion, it consists in this: that it affords a greater scope of customers for both markets. A man comes up from the country, for instance, from Kent, with an intention of buying one, two, or three, or whatever number of beasts he may think proper; also to buy sheep when the season will not allow a supply in his own country, because every country has its own time to give its supply; and I consider that when there is a scarcity sometimes in the live market, there is a greater quantity in the dead market; and the buyer avails himself of the privilege of being able to attend both markets: and also he has an opportunity of choosing the cheapest market price. But in case they were placed at a distance, he could not avail himself of that opportunity; and if the buyer cannot avail himself, the purchaser cannot.

394. Are the buyers in the habit of resorting to both markets about the same time?—In general they come from one to the other: perhaps a man may attend Smithfield market two or three times in the course of the morning, and also attend the dead market two or three times in the course of the morning.

395. Those persons who attend Newgate market on the days on which Smithfield market is not held, of course cannot attend Smithfield market on those days?—No.

396. Of the persons who attend Newgate market upon the days on which Smithfield market is held, what proportion do you think attend Smithfield market?—There are a great many buyers that come to the dead market that do not attend Smithfield market at all.

397. Do you sell on account of the person who consigns you meat from the country, or do you buy it of him and sell to the butchers?—I receive my commission the same as a corn-factor would receive it for selling the commodity. I have so much per stone for selling beef; I have so much per head for selling sheep; so much for selling pigs; and whatever the article makes to the purchaser, that return is made to the party consigning it to me.

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398. The commission is upon the article, not upon the price?—It is upon the article.

399. The competition in the market amongst the salesmen is sufficient always to protect the interest of the party sending?—Quite so. We are placed in this position: a man does not send me the whole of his commodity; he divides it between me and others, and we compete with one another to endeavour to do the best we can. If I feel disposed, on account of the multiplicity of meat on the preceding day, to make a reduction in the price according to my anticipation of the value, I do so; and very likely it turns out to the interest of my employer. A party comes in the market to my shop; he bids what he pleases; we make no remark upon his bidding: if I refuse it, very likely he goes to the next shop, and what I refuse the next may take.

400. If the same party in Edinburgh consigns meat to different salesmen, he can compare the prices obtained from each of them?—He does.

401. In that way is he not completely secure against any neglect of his interest?—Quite so.

402. You will sometimes get a letter, if your sales are not so good as your neighbours?—We do daily.

403. You stated that your shop belongs to the Corporation; is the rent which you pay a moderate rent?—I cannot say that. I have reason to find fault with the rent.

404. Which rents are the highest, the rents for shops belonging to the Corporation, or the rents for the private shops in and about the market?—I do not think there is any difference.

405. You think the Corporation take the full rent for their shops?—They are bound to receive the rent which is offered to them; their shops are let by tender.

406. Have your rents been lately raised?—No, we tender for our shops, and the Corporation cannot alter; they have never done so.

407. Is there any toll payable upon the meat sold in your shop?—There is a toll paid.

408. Is the toll exacted?—I pay a toll weekly, but I forget what it is.

409. Then it may be presumed that the tolls are not very exorbitant?—They are not exorbitant, but what the exact amount is I cannot remember.

410. In describing the difficulty in getting meat from the vans and wagons, you stated that it is sometimes unpacked in Newgate-street. After you get it to your shop, is there any delay between receiving it into your shop and disposing of it there if you meet with a customer?—There is no delay any further than meeting with a customer willing to purchase. As soon as it arrives on our premises we hang it up for sale immediately, and we wait for the first opportunity to find a party to purchase it.

411. Then if a salesman unpacking his meat finds any diseased, and unfit for human food, he sends for the Inspector?—My practice always is to place that article on one side, and send over one of my men to the officer appointed by the Corporation to take that article away; it goes to Sharp's-alley to be boiled down, and he gives me a receipt, and I send that receipt to my employer.

412. Then are we to understand that the condemnation of such meat which may be brought without difficulty to the market, and unpacked and offered for sale, depends upon the honour of the salesman?—No; in case I did not think it proper to send for the officer of the market, and the carcass were exposed for sale at my shop, the officer would then exercise his duty.

413. There is in your opinion sufficient accommodation in the market to enable the Inspector thoroughly to perform that duty independently of the salesmen?—Quite so; you may walk through my shop the same as you may walk across Whitehall.

414. Supposing the officer goes to see one portion of meat destroyed, may not some other portion of meat that is equally unfit for sale escape detection in the mean time?—He comes round in the morning and the salesmen tell him, or he condemns it according as he sees it. At a certain hour when all the pitchings are done with, at ten or eleven o'clock in the morning, he goes round and collects it all together and goes to the knackers and sees it all destroyed.

415. In the early part of your evidence you said that the meat slaughtered in the country was more valuable in a slight degree than the meat that comes up by railways alive; you are aware that there are some railways in which the stock is paid for by the head, and that in other railways it is paid for by the truck; do you perceive any difference in the state of the stock that comes by those different modes of conveyance?—No, the responsibility in a great measure rests with the consigner when he pays per truck, but if the consigner is of that greedy disposition that he will endeavour to place more in a truck than it will accommodate, he must meet with a loss; this is invariably the cause of bruises; it is no fault of the Company. They say we will take the sheep or beast at so much per head, and we will afford you sufficient accommodation; and when there is a great quantity coming, the party consigning sends a person with them to keep them on their legs, as many of the companies give a free pass to the owner's drover.

416. Then it is likely that those that come charged per truck are less valuable than those that are charged per head?—Yes.

417. Have you any experience of sending up live stock to London?—Yes, I have for some years. Some parties in Aberdeen have been in the habit of sending dead meat, and they have sent beasts alive, and said, "Venables, we shall be glad if you will sell those beasts alive for us in Smithfield, or if you think you can bring them to a better account, slaughter them for us and sell them in your dead market." A discretion was left to me to act as I thought most beneficial; we have sometimes sold them, and sometimes slaughtered them, but we take nothing upon ourselves. We act as agents in both cases; we never make the property our own, but we slaughter the cattle and give them an account of it as a dead carcass.

418. Did those come by railway or by steam?—Sometimes by steam, sometimes by railway. The communication by railway with Aberdeen was opened last week. The week before we had a great deal that was almost destroyed that came by steam, having been much delayed

by bad weather. By railway the expense was 5s. per cwt., and now they have reduced it to 4s., and the vessels charged 3s. 2d. The transit by rail is quick and daily. December 19, 1849.

419. Are you in the habit of attending Smithfield market?—No, my whole attention is to the dead meat. Mr. B. Venables.

420. Have you any suggestions to make as to shortening the duration of the markets? do you think that might be done without injury to your business or to the public?—With respect to the dead-meat market, it would be hard upon us, as the tenants of the City, to be compelled to close our shops at certain hours, if parties round, that have property of their own, are allowed to keep their shops open.

421. But suppose it were general?—That is a question that I can hardly tell how to answer, as I do not see how it would work.

422. For instance, the carts and vans stopping in the neighbourhood are a great nuisance, from their remaining about the Old Bailey and Newgate-street all hours of the day; could not those hours be safely shortened without injury to the public, and without undue interference with your trade?—With respect to myself, I should be very happy, for I find that they leave it open too long, and I cannot see why the market could not be closed at certain hours if it were general; but if it were not general, the position it would leave us in as tenants of the Corporation would be very serious.

423. Is there any remark or suggestion that you would wish to offer to the Commissioners in addition to what you have already stated?—The only thing that I have to offer to the Commissioners is, that I should be glad of a further extension of my premises. I think that I could carry on my business more pleasantly to myself, and more beneficially to my employers, and with less annoyance to my neighbours.

424. Is it your opinion that Newgate market should remain, or that there should be a dead-meat market somewhere in the locality?—Most decidedly, on the ground of its central situation.

425. How near to the live-meat market do you think it essential that the dead-meat market should be?—I think the nearer they are together the more beneficial it is to the purchaser, and also to the seller.

426. You think that half a mile distance would be a serious inconvenience?—It would be a great inconvenience to the parties that attend the two markets, because they have a limited time to do their business in. I think the nearer the markets are together the more convenient, because a man coming to purchase one article does his whole business together.

427. Do you think that the substitution of Farringdon market for Newgate market would be an improvement?—I do not.

428. What is your reason for that opinion?—I think we should be worse than we are at present.

429. In what respect?—In the first place, I do not know whether I am right or not, but individuals in Newgate market, with their private property, would not be driven out without a very large compensation.

430. Assuming the transfer to be effected, would the public be better accommodated in Farringdon market?—They would not.

431. Why would they not?—Because the access is so bad, and you go direct on to Ludgate-hill; there is a dead pull for any meat that may go out, and there is a dead set for anything that may go into it.

432. Do you think the poultry market might be advantageously removed from Newgate?—I should agree with that in a great measure, because the quantity of poultry is so wonderfully different from the quantity of meat.

[The Witness withdrew.]

Mr. William Jee Prentice, examined.

Mr. W. J. Prentice.

433. You are a salesman in Newgate market?—I am.

434. How long have you been employed in that manner?—I have been employed upwards of 28 years.

435. Uninterruptedly?—Uninterruptedly. I have never left the market.

436. Will you describe to the Commissioners the nature of your business?—I am what is called a commission salesman. My entire occupation is the selling of meat sent up dead from the country, as contradistinguished from a carcass butcher. I am agent for persons sending up dead meat to London.

437. You sell meat on account of the person who consigns it to you, and remit to him what you receive from your customers?—Yes; and I have a commission for my trouble.

438. Do you receive meat from many persons in different parts of the country?—A great many.

439. Will you name to the Commissioners some of the principal places from which you receive meat?—The counties of Suffolk and Norfolk in the east, Dorset, Devon, and Somerset in the west, and most of the Midland Counties, and Liverpool occasionally.

440. Do you receive any meat from Scotland, or from the Northern Counties?—Yes, I receive some from Edinburgh, and even as far as Cupar, in Fifeshire.

441. How does it usually come to you—by railway?—Most generally: more than through any other medium.

442. Does any come by water?—Not so much now; Scotch meat comes more by railway than formerly.

- December 19, 1849. 443. Is it sent to you in boxes or in hampers?—In some instances in boxes; most frequently in hampers.
- Mr. W. J. Prentice. 444. Does it reach you in good condition?—Most generally; upon the average, better than it used when it came by water, and it is a shorter time of transit by railway.
445. Has the opening of railways increased the transmission of dead meat to London?—It has very greatly.
446. You recollect the first opening of railways?—Quite well.
447. Has that change in the means of conveyance produced a great effect upon your trade?—Decidedly.
448. Do you expect that the supply of dead meat to London by railway will increase?—I see every prospect of it. There are new railways opening continually.
449. Do you find that you have facilities for unloading packages that come to you by railway in Newgate market?—We have not the requisite facilities, for want of a thoroughfare for carts and waggons. The great difficulty appears to be, that there is no carriage thoroughfare. The market has but one inlet for the horses and carts, and that is not eight feet wide. There is no carriage-way through the market, and consequently a vast deal of difficulty and trouble is the result.
450. How do you manage to make this one inlet suffice for the wants of the market?—It is wonderful to me how it is accomplished. There is only one channel, and that is sometimes blockaded completely with waggons and various things.
451. Is your shop situated in the alley?—Mine is very near where the green market used to be; I am in the centre part.
452. Does your shop belong to the City?—Yes; I am a tenant of the Corporation, and have been so from my commencing business.
453. What is the size of your shop?—I have together three shops. I have added, in two instances, a shop to the one I had before, for the want of room. The whole extent of the premises together is not more than twice the size of this apartment.
454. Then the exposition of your meat is difficult?—Yes.
455. Is it often placed upon the floor?—We are not allowed to do that; but we are very much put to it for room, though I pay a very high rental.
456. Will you state more in detail how the unloading of the meat is managed?—There are large town-carts, which principally take the hampers from the railways, and they are brought into the market. In some instances they cannot get into the market, consequently they have to take the hampers off on a truck with small wheels, and it requires three or four men to push it along.
457. Is much of the meat unloaded at a little distance from the market?—Yes, in Newgate-street.
458. Without bringing it through the narrow inlet you have mentioned?—If it is blocked up, they cannot.
459. Is there much inconvenience in consequence of their being unable to bring the goods to the edge of the market?—The inconvenience is not felt so much by us further than the stoppage which I speak of, which cuts off the communication from one of my shops to the other, therefore I sustain very great inconvenience from the blockade. But still it does not matter to us, as long as we get the meat in good time; but we cannot do that at all times.
460. Assuming the meat to be brought into the market, is there sufficient room for unpacking it when it arrives?—We are very frequently very much crowded when there is a large supply, even after we get the meat. We often feel great inconvenience in that way, so much so that sometimes in the morning my neighbours, having a great quantity of meat, I have difficulty in picking my way through the hampers to get to my premises.
461. It would be a great convenience to you to have more space for unpacking the meat when it arrives?—It would be a great object to me.
462. Supposing it to be unpacked, have you sufficient room for disposing of it, either stowing it away or exhibiting it in your shop?—I am now pretty well off in that respect, but, as I before observed, I have had to get an addition to my shops; I have three, and now I have enough room to hang my meat, when it is opened.
463. Do you know how your neighbours are situated in that respect?—I do. I know that some are very short of room. I can speak for the one next door, for instance.
464. Has he one shop, or more than one?—He has two.
465. Is much meat hurt in consequence?—I think sometimes there is a want of exhibition of the meat, consequently it damages. It does not actually spoil, but it damages. From not being able to open it, it remains in the hamper till the next day, and if it is a bad day, it looks much the worse for it.
466. And that meat is sold at a less price in consequence?—Yes, it is.
467. Do you consider that the want of space is, on the whole, a disadvantage to the persons who consign meat to you?—Decidedly.
468. Is it the fact that through want of room you are unable in every case to do full justice to your employers?—Precisely so. We are not at all times able to accomplish that, from want of space.
469. Do you consider the size of the market adequate to its purposes?—Decidedly not; it is much below the requirements for so large a quantity of meat as we have.
470. What do you suppose the increase in the last ten years to be?—I have been looking over my books in consequence of a request which I received from the City Corporation, and I should compute the increase in the market itself to be almost double in ten years,—that is, that there is double the quantity of country meat that there was ten years ago.

471. Can you give the Commissioners an idea what the quantity is?—It would take a great deal of trouble to get it out. I could tell my own quantity from my books. December 19, 1849.
472. You know, from practical experience, what the trade was ten years ago, and you know that now it is doubled?—Yes. Mr. W. J. Prentice.
473. What quantity of cattle is slaughtered in the market?—A very small quantity of cattle is slaughtered in Newgate market; it is merely a dead-meat market.
474. Is there a cellar used for slaughtering under your shop?—No, I have none.
475. But are there cellars so used?—There are a few such cases to be found; but they are not much used.
476. And they have greatly diminished in number?—Yes.
477. Is the practice of slaughtering in cellars in Newgate market going out?—Yes; very much.
478. Has the sending of meat by railway diminished the practice of slaughtering in the market?—Very greatly.
479. Does it appear to you that there is any advantage in continuing the permission to slaughter under the shops in the dead-meat market?—I think, to prevent that being done would be a detriment to business, for in some instances we have sheep sent up alive. I myself have consignments of sheep sent up alive, and I have to get them slaughtered somewhere, and it is highly necessary that there should be some convenience of the kind.
480. Do you think it necessary that they should be slaughtered under the shops?—It is not at all necessary; and in most instances now they have slaughter-houses on the ground-floor.
481. Would it not be sufficient if the sheep were slaughtered in the neighbourhood of the market?—Yes; if it were in the immediate neighbourhood, and if they had not to take them far after being slaughtered.
482. Do you consider it advantageous for Newgate market that it is in the neighbourhood of Smithfield market?—Decidedly.
483. In what does the advantage consist?—In this:—supposing that I am a butcher requiring to buy; I come to Smithfield, and find mutton at 6d. a-pound, and I do not like to give so much, and I go to Newgate market: when I get there, perhaps I find it is 6½d. a-pound, and I have an opportunity of going back to Smithfield to buy my meat; and, *vice versa*, if I go to the live market, and find meat very dear, having ascertained that, I can come to the dead market and buy meat there, if cheaper.
484. Do the butchers who attend Smithfield market generally visit Newgate market?—Most of them; they go backwards and forwards. The country butchers generally deal at both markets.
485. Many persons must go to Newgate market who do not go to Smithfield market?—Yes, there are some; but the greater portion go to both markets.
486. Is it not the fact, that Newgate market is held every day in the week, whereas Smithfield is held only two days in the week?—Yes.
487. Therefore on the days on which Smithfield market is not held, those who attend Newgate market have no opportunity of attending Smithfield market?—No, they have not.
488. Is it the fact that Newgate market is better attended on the days on which Smithfield market is held?—Yes.
489. Is there a great difference between the attendance on those days and other days?—Yes; on Mondays and Fridays we have a great many more butchers at Newgate market than on the other days of the week, except Saturday.
490. Is not Saturday a great day at Newgate market?—Yes.
491. Is the attendance fuller on Saturday than on other days?—Yes.
492. Than on Monday or Friday?—Yes.
493. Then the greatest attendance is on the day on which Smithfield market is not held?—Yes; but that is easily accounted for, by Saturday being the day upon which everybody provides for the Sunday.
494. Do people come to Newgate market on Saturday more than on Friday?—Yes; the public, as well as butchers, come on Saturday; we get an influx of all kinds of buyers. The tavern-keepers and a great many persons use the wholesale market.
495. The smaller butchers in the surrounding districts come on Saturday to Newgate market?—Yes.
496. And you have persons who come to Newgate market who never go to Smithfield market at all?—Yes, small butchers.
497. Do they come on Saturday more than on Tuesdays, Wednesdays, and Thursdays?—Yes, that class of buyers come principally upon Saturday.
498. As soon as you have unpacked the meat that you receive, do you proceed to sell it if you have got a customer?—Yes; directly we unpack it we put it upon the hooks and begin to sell it.
499. You do not wait for a visit from the Inspector of the market?—Yes, if we have an article that we are in doubt about; if we have any article of that kind it is not exposed for sale till the Inspector has seen and examined it.
500. But, as a matter of fact, you sell a certain portion of meat which is not seen by the Inspector?—Yes; anything that is of an unquestionable character we sell without the least hesitation.
501. The attention of the Inspector is called to unsound meat by the salesmen?—Yes, not only as a matter of propriety, but as a matter of convenience to ourselves, because if we sell meat which is found to be unwholesome we are brought before a magistrate.

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502. The Inspector would have an opportunity of seeing unsound meat if it was exposed in the market, even if you did not give him information?—Yes, he is always walking about the market.

503. Do you believe any considerable quantity of unwholesome meat is sold in Newgate market?—I think, not to the amount persons imagine. There is a great deal of plain meat sold which many persons, who do not understand it, imagine to be unwholesome, whereas it is notoriously good meat, but very thin and poor. A great deal of plain meat is sold, but it forms a small proportion of the aggregate of meat that is sold in the market.

504. What do you mean by "plain meat"?—Very poor meat, that is killed in an unfit state. You may compare it to a fruit gathered before it is ripe; a great deal of poor mutton, for instance, which is very thin, but wholesome enough.

505. Do you believe it to be possible to enlarge Newgate market sufficiently for the wants of the metropolis?—Yes, I think it is possible; and I think that an enlargement of Newgate market, to a certain extent, would accomplish every object. It is wonderful to me that we have been able to conduct the business without those thoroughfares which I have before alluded to. We have nothing like a thoroughfare, which makes a great deal of difference to the whole process.

506. If you had good thoroughfares, and the market were enlarged, do you think it would be sufficient for all the wants of the Metropolis?—I do.

507. That is, if it were enlarged to the extent of double the space now occupied in the sale of meat?—Yes; if we had half as much space again it would do very well.

508. Do you think that if it were a third larger than the present market, and proper inlets made, the public would be sufficiently accommodated?—Yes.

509. If, for instance, the poultry-market, or any other part of the business which is now done in Newgate market, were removed, and that space were added to the dead-meat market, do you think it would be attended with advantage to the dead-meat market?—We should, in that case, get the benefit of the space so occupied, but we should lose in another way—we find that persons who come to buy poultry buy meat of us, and by the removal of the poultry market we should lose it in the same way as we lost when the green market was removed. When the green market existed, we used to serve a great many persons who came to buy vegetables: we found that when they had half a load of vegetables, they often filled up with meat, and we miss a great many of those kind of people.

510. When you have live beasts consigned to you, where do you send them to be slaughtered?—To the neighbourhood of Smithfield market; there is one particular person that I send them to.

511. What do they charge for slaughtering beasts?—The present price is 3s. 6d. per head; some charge 3s.

512. Do you think you get all the fat and profit of the beasts that they slaughter?—We take care to send a man with the beasts; but I believe I have a very honourable man to deal with.

513. But you have to send a man in all cases?—Yes; that is the regular custom, or we go ourselves.

514. Supposing there were public slaughter-houses, with parties appointed to supervise, would there be any necessity for sending a man with the beasts that were to be slaughtered?—I do not think there would be any advantage in that—there would be a great jealousy existing.

515. How is the carcass brought to your place of business?—In a large cart.

516. Does it suffer from the transit?—No; it is so short a transit—five minutes would accomplish it.

517. Do they use any particular care in the transit of the carcasses, to prevent their knocking against each other?—Yes; they have a large and capacious cart, with rails to lay the carcasses on.

518. How far do you think a carcass could be conveyed without any injury to it?—It would not do to have it carried about in that state before it is thoroughly settled. We require the meat fresh, and there is always a looseness about it, and a moisture; if it were an hour's ride, or half an hour's ride, it would be very detrimental to the state of the meat before it was hung up on our hooks, particularly in warm weather.

519. And it would interfere with the trade, by the accumulation of carts employed in bringing the carcasses?—Yes; and it would give us a great deal more trouble than it does now.

520. Do you find that meat which is sold to poor customers must be more fresh, and have a more florid look than that which is sold to families?—I do not know much about what the butchers do; but this I know, from those who buy of me, that country-killed meat, which looks inferior to other meat, is frequently sold to families, though the poor people will not buy it.

521. If it does not please the eye they think it unwholesome?—Yes; in fact, I have had articles hanging for sale that poor people look at and turn up their noses, but which is very good country meat; it is frequently a little injured in appearance by the packing, but is just what a good judge would appreciate.

522. Is there any other observation that you would wish to make to the Commissioners, with regard to Newgate market?—I would say, with respect to my own evidence, I am in a very independent position: it would not matter to me in what way the business was done, being merely an agent; I have no local interests, being a tenant of the Corporation, I am as much at liberty as any one can be, and I have been many years a tenant of the Corporation, and have paid very large sums of money for rent: at the same time, I am very well satisfied, but I am quite aware that there is great room for complaint. With respect to the want of thoroughfare, and the observation that I would make would be this: that if

the market were enlarged to the extent I have stated, every purpose would be accomplished, and we should also be near Smithfield market, and have the benefit I have described, of giving the buyers the option of either market.

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523. Supposing the cattle market were removed from Smithfield, what effect would that have upon Newgate market?—I should look forward to its being productive of a benefit to the salesmen in Newgate market, inasmuch as the butcher would be compelled more than at present to buy dead meat. He would not have the facility of making the choice at either market.

524. Supposing the cattle market were at a greater distance from the centre of the town, would that change of site have any tendency to increase the importance of the dead-meat market?—Yes; it would oblige many butchers to buy their meat dead who now buy it alive, and they would be obliged to come to the dead-meat market instead of going to the cattle market.

525. On that supposition, there would be an increased necessity for the enlargement of Newgate market?—Yes.

526. With reference to those who transmit the dead carcasses from great distances—from Scotland, and so forth—does it come within your knowledge whether they suffer the carcasses to get cold and stiff before they send them, or whether they pack them warm?—They suffer them to get cold before they send them; they are very particular about that; and it is of very great importance, for if they packed the carcasses when warm they would arrive in a putrid state, particularly at certain times of the year.

527. If you had carcasses to be transmitted to your place of sale, and then to be carried one or two miles, the practice would be that they should be suffered to get cold and stiff before they were transmitted to you?—That would be very important; but I would make another observation with regard to that: if a butcher were obliged to have his meat killed at a certain distance, it might be exceedingly inconvenient for him to get it killed at that place and remove it to his shop, and it would frequently happen that he must move it whether it was in a proper state to be removed or not, in order to get it to his place of sale, and thus the public would suffer from the establishment of *abattoirs*.

528. If the place at which cattle were slaughtered were any great distance from the place of business, you think the public would suffer?—I am sure they would. Perhaps I might be allowed to make an observation: I was in Paris on one occasion, and saw the *abattoirs*, and I at once saw the complete fallacy of the boasted statements respecting the French butchers, and I have no hesitation in saying that the French are quite a century behind us in the preparation of meat and the dressing of meat, in order to render it a good article.

529. Will you describe the particulars in which the French are inferior to the English butchers?—In the first place, they inflate the animal with a large pair of bellows. I observed that invariably they took an immense pair of bellows and blew out the animal so as to disguise the meat, that one would not know whether it was a cow or an ox.

530. For what reason do they inflate their animals?—I presume they do it because they are not so fat as our animals.

531. Do they inflate them in order to facilitate the removal of the skin from the carcasses?—Yes, that is one reason; and I observed that they took off all the lower portions of the animal, and left them in the hide; they were left for the people to come and take out for the soup-houses.

532. Does it come within your cognizance that people are permitted to enter those *abattoirs* for that purpose?—Yes; certain parties who contract for it. I may perhaps be allowed to make one more observation respecting what I observed in France, which is, that they have so much skill in cooking the meat that it hardly matters to them whether it is tainted or not. I am speaking from my own observation. I went into a *café* there, and called for a beef-steak, in order to test the quality of the meat, and the cooking made it very savory, but directly I put my knife into it, it crumbled under it, being positively decomposed.

533. Are you able to say that the meat was bad by merely touching it with your knife?—I can say that it had been kept a good deal too long to suit the English taste; but being so well cooked and flavoured, any one not knowing what it was might have pronounced it very good.

534. Is there anything else which it occurs to you to mention?—I should observe, that the system which they adopt in Paris, as regards the slaughtering, appeared to me exceedingly defective; their system of order was carried to that extent that I observed animals lying upon the ground with the entrails inside of them for nearly half an hour, which in this country would be thought quite out-of-the-way. In order to carry out the system of one man being employed to do this, and another man being employed to do that, a great many animals were kept much too long with their entrails inside of them. Now every experienced butcher in this country knows that that ought not to be allowed; the object in England is, to get the entrails removed as quickly as possible after death, for sometimes in hot weather the entrails remaining inside the animal for a very short time only after death would be sufficient to taint the whole body of the meat.

535. Is it the fact that in France their operations are much slower than in England?—Yes, there are more people employed, but the work is done more slowly notwithstanding.

536. To what do you attribute that difference between the English and the French butchers?—To the love they have in France for form and ceremony.

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537. Is it owing to the natural habits of the trade or to over-regulation by the Government?—I think it is owing to over-regulation by the Government.

538. Do you happen to remember the name of the abattoir which you visited?—Mont Martre.

539. Are you of opinion that that plan of inflating the carcass, and also the circumstance of the intestines being allowed to remain a longer time than you think right in contact with the carcass, are essential to the system of abattoirs?—I am not aware that they are, but that was the system in that abattoir which I visited, and I was likewise informed that it was the same in another place, but that I did not see.

540. Have you considered the subject of slaughtering, with regard to London?—Yes; I have seen a good deal of it.

541. Does it occur to you that there are any objections to the present system of allowing anybody to slaughter anything he thinks fit in any place which he selects?—I think there cannot now be any objection under the present regulations; there are Inspectors to all the different localities.

542. In the City there is an Inspector, but not outside the City?—I thought there was. It is very much to the interest of every butcher to keep his place in good order. I think under the present regulations in the City there is nothing to complain of now. The place where my animals are slaughtered is a picture of cleanliness.

543. Do you live in the market?—No, I reside at Islington; there is no house attached to my premises, if I have anything consigned to me alive, I go or send to see it killed.

544. Has there been any case of sickness in the market during the late cholera?—Not one case; in fact, I have not heard of any person being ill but one; but he was taken ill of cholera, not in the market, but at Walworth, where he resided.

545. With respect to what you have stated as to the slaughter-houses, I should wish to read the following:—"A second evil and nuisance necessarily contingent upon the locality of slaughter-houses, however stringently supervised and regulated, in the midst of large and populous towns, is the quantity of animal ordure deposited upon the public streets and thoroughfares leading to such slaughter-houses, which, besides forming a most offensive addition to the ordinary surface-filth, excites and accelerates its decomposition. This evil is augmented in the ratio of the size of the town, and where, as in London, most of the surface filth of the streets is washed down into the sewers, the continual passage of cattle, sheep, and pigs in the neighbourhood of the intramural slaughter-houses must materially increase the amount of that decomposing matter, the emanations of which are constantly escaping from the untrapped gully-holes to infect the atmosphere of the metropolis. Nor ought the occasionally fatal injuries, and the constant peril of life and limb, incurred by the inhabitants of large towns, the streets of which are so frequently traversed by goaded and over-driven cattle, to be overlooked in an enumeration of the inevitable evils of slaughter-houses situated in the crowded parts of towns." This is part of a Report published in 1845 by the Commissioners on the State of large Towns and Populous Districts: how far does your experience of slaughter-houses coincide with that statement?—I should say that that is a statement of a theoretical nature, and not at all borne out in fact. I can give two or three reasons for saying so. Indeed, it is self-evident; for every article which they speak of as being so offensive is in request, and parties are willing to take them out of the way. There are applicants from all quarters even for the manure, and they make a profit of all those things.

546. The scavengers who go round the streets take those articles away?—It does not fall to them, but there are persons in the neighbourhood of London who collect them; and I should say that that is a statement entirely based upon theory, and not at all upon practice.

547. Have you observed any inconvenience to arise from the present slaughter-houses in London?—Not any.

548. They have greatly diminished in number?—Very greatly; there is nothing like the killing in cellars that formerly existed. A great deal of public attention has been called to it, and the evil has been very much mitigated.

549. Is that likely to continue to diminish?—I think it will continue to diminish; in fact, it is falling into disuse, I am happy to say.

550. Do you consider that under-ground slaughter-houses are objectionable?—Very much so, unless they are on a very large scale; but even then I should object to them, because the animal would lose the benefit of the air that might be obtained on the ground-floor wherever the slaughter-house was.

551. You stated that the slaughter-houses in the City were under good regulations. What are the regulations?—No one is allowed to carry on a slaughter-house without a licence.

552. Is that under a local Act?—I think it is under a bye-law: the City authorities are exceedingly strict.

554. Are there any other regulations?—The Inspector visits the slaughter-houses to see that they are kept clean.

555. Are the visits effectual for that purpose?—Decidedly.

556. Suppose the inspector found that a slaughter-house was not clean, or was a nuisance to the neighbourhood; what steps would he take?—I presume that he would not grant the licence on the next application for it: the licences are granted for a year.

557. Do you see any objection to extending that regulation to the other parts of the metropolis?—I do not; I should rather recommend it. I should say the public would

benefit by the slaughter-houses being under control. In the West End there is nothing at all to complain of. In most instances the butchers residing in the West End are obliged to be exceedingly particular: I allude to the more open localities; and any one walking through the West end of the town will have no occasion to complain in any way. I speak from my own observation; for I go round collecting every Tuesday, and I take the whole circuit of the West End.

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558. Have you been in the principal slaughter-houses in Clare market?—No.

559. Have you been in the slaughter-house in Market-street, Jermyn-street?—Yes.

560. Is that in as good a state as the slaughter-houses in the City?—It is not in so good a state as those in the City; the slaughter-houses in the City are very superior to it.

561. Are you aware that the slaughter-houses in Newgate market have a receptacle for the blood of the beasts which they call the "blood-hole"?—Yes, there is a place of that kind in the slaughter-house where my beasts are killed, and the butchers receive a good deal of money from the sugar-bakers and colour-makers for the blood.

562. Are you aware that the colour-maker in the summer time frequently does not find it convenient to send for this blood till it has accumulated in large quantities?—I should have thought he would have sent for it, for the plan of doing business is, that the consumer contracts, and therefore he is not consulting his own interest if he allows the blood to remain perishing, for it is not of so much use to him if it is tainted. They pay so much a-year. In many instances 10%, and in some 20% a-year for the whole of the blood in a slaughter-house. I can give an instance, Mr. Carpenter has so much per annum for all the blood of the animals that he slaughters, and there is great care taken on the part of the consumer to provide large casks in which to take it away, that they may get it in the best state that they can.

563. At present, a butcher out of the City can slaughter upon his own premises as he thinks fit, without any licence, and without any inspection, provided he is not prohibited by any covenant in his lease?—Yes.

564. In a great part of the metropolis, therefore, there is no protection against converting any place into a slaughter-house, except the care of the landlord?—No; there is no other protection than the fear of being indicted.

565. That is a subsequent operation, but if a person chooses to convert any building into a slaughter-house, he can do so, provided he is not restrained by any covenant in his lease?—Yes, he can, of course, subject to the consequences of doing so.

566. Do you think the butchers of that part of the town would have reason to complain if they were made subject to a licence in the same manner as the butchers in the City?—I think not. No respectable, well-intentioned man could complain, if the licence were not very expensive.

567. Assuming the licence to be required merely for the purpose of preventing improper slaughter-houses, and not for the purpose of raising any money, would it, according to your view, be likely not to be objected to by the trade?—I think they would rather approve of it; and a respectable man would feel himself better situated under a control of that kind, not having a large sum of money to pay for his licence if under the surveillance of parties who would allow him to carry on the business in a legitimate and proper way.

568. Would it not, to a certain extent, be a protection to respectable butchers that there should be such a system of licences?—It strikes me that it would be so. There are a great many butchers at the west end of the town who have no slaughter-houses of their own, but who buy their meat dead. I could name a great many butchers who are doing a large business who have no slaughter-houses; but there are many who, from the time they commenced business, have been in the habit of killing meat; and there is a great deal of pride on the part of butchers in killing their own animals occasionally, and exhibiting them.

569. A slaughter-house is by no means essential to the business of a butcher in the Metropolis?—I might almost say it was essential, for there are certain times in which a butcher, for instance in the lamb season, would be very liable to lose his trade for lamb unless he had a slaughter-house.

570. How then do those butchers who have no slaughter-house carry on their trade?—They get the animals killed somewhere, or they are obliged to buy them dead.

571. Are there not a great many butchers who kill their own sheep and lambs, but who do not kill oxen?—Yes; a great many kill lambs in hot weather, who do not kill anything else.

572. Is it the case that those butchers who wish to present their meat in the best state must have a slaughter-house?—Yes; they have then an opportunity of killing when they like, and exhibiting their animals in the best style. I can speak from my own experience to that; my father being a butcher, we were obliged to kill lambs on Saturday night for the Sunday's supply in hot weather; we have killed them in the cool of the Saturday evening frequently for the next day's consumption.

Adjourned till Wednesday, the 2nd of January, 1850.

WEDNESDAY, January 2, 1850.

January 2, 1850.

GEORGE CORNEWALL LEWIS, Esq., M.P., in the Chair.

Mr. R. Pocklington.

Mr. Robert Pocklington examined.

573. What office do you hold in connexion with Newgate market?—Inspector of dead meat, and the collector of the rents of the Corporation.

574. When were you appointed?—Last February.

575. By what authority were you appointed?—By the Lord Mayor and by the Markets Committee.

576. Is that an office created by Act of Parliament, or is it by a bye-law of the City?—I cannot answer that question. I should imagine, by an order of the Corporation.

577. What is your remuneration?—I have 20*l.* a-year for being inspector.

578. From what fund are you paid?—That I cannot tell.

579. By whom are you paid?—I am paid at Guildhall, at the Chamberlain's Office.

580. What are your duties?—My duties are, to go to every shop round the market to see that they have no bad meat that is not fit for sale; if it is hung up by the hooks, and is what I call bad or physicked, which is frequently the case, or if it is a dead sheep that died of itself, I seize it. Sometimes it is as green as it can be, not fit for anybody to eat. It is hung up on the hooks, and noted as coming from this gentleman or the other gentleman, and exposed for sale. When I find that it is not fit for anybody to eat, I seize it, and take it to Mr. Atcherley's at Cow-cross, and have the meat cut from the bone, and the meat put into one boiling copper, and the bones into another, and they are boiled for several hours, so that it is not fit for anybody to eat, nor even to be used for sausages.

581. How often do you attend at the market?—Every morning at five o'clock.

582. How long do you continue in attendance?—Till twelve o'clock.

583. Does the market close at twelve o'clock?—In the day time, the wholesale shops do. And on Saturdays I am there from five o'clock to eleven at night.

584. Do you often seize meat?—I am sorry to say, too often.

585. How many times in the course of a week in general have you occasion to seize any meat?—This last month I have seized 34 quarters of beef, 31 sheep, 8 pigs, and 1 calf. The largest quantity seized in one month—48 quarters of beef, 56 sheep, 8 pigs, 5 calves.

586. May that be taken as a fair sample of the number seized in a month?—I have seized a great deal more than that, but I am speaking of the last month.

587. May the last month be taken as a fair specimen of an ordinary month?—I should say it is less than in any prior month since I have been in office.

588. Is much meat sold in the market without your previously inspecting it?—Thousands and thousands.

589. In what way are you able to discover unwholesome meat?—From being in the trade since I was a child—brought up to it.

590. Do you discover it by your own observation, or by your attention being called to it by the salesmen?—Sometimes the salesmen send for me to look at it, and state what my opinion is, and if I find it as not fit for sale, they say, "Be so kind as to take it away."

591. Do they frequently do that?—Frequently. This very morning three different salesmen in the market sent for me to take some meat away.

592. Do you rely principally upon your own observation for the discovery of unwholesome meat, or upon the information which you receive from the salesmen?—I take it from my own judgment. I try the meat with skewers. I look at the article, and see whether it is fit for human food or it is not, and if it is not, I condemn it; and many people say that I ought to condemn more than I do; if I can possibly pass it, I always do.

593. In what way does the meat come under your notice,—do you discover the fact of there being unwholesome meat by your own observation, or is it represented to you by the salesmen?—It is frequently hanging on the hooks. When I walk round to the different shops in the market, I look at different things, and I tell them such a thing is not fit for human food. Sometimes the salesmen send for me to come to look whether it is fit for sale, and I say, "Certainly not."

594. How was it with respect to the last meat you condemned—did you find it out by your own observation, or did the salesmen send for you?—It was hanging on the hooks for sale, and a note of the name of the gentleman from whom it came was put inside the sheep.

595. You said that you had been in the trade all your life,—have you been in business as a butcher?—Ever since I was born almost—since I was four years' old. I stuck a sheep when I was four years old.

596. Did you keep a butcher's shop?—Yes.

597. When did you give it up?—The moment I came into office.

598. Was the salary of 20*l.* a-year an equivalent for giving up your trade?—I am collector of the rents of the market.

599. Do you receive a per centage upon the rents you collect?—Yes.

600. What may be the amount of your commission upon the rents?—I have not been a twelvemonth yet, but I expect it will be about 150*l.*

601. Then altogether your office is worth about 170*l.* a-year?—Hardly so much.

602. How much do you consider that your office is likely to be worth?—I think it will be about 170*l.*, but I cannot be positive.

603. Does your inspection only extend to the Corporation property in the market?—All over the City of London.

604. Does it extend to Tyler's market?—Yes.

605. How much of Newgate market do you believe belongs to the City?—Not a great deal. January 2, 1860.
606. Have you the same power of inspection in that part of the market which does not belong to the City as in that part which does?—Just the same all over the city of London—even down to the wharfs and anywhere else. Mr. R. Pochlington.
607. Does the want of space in Newgate market increase the difficulty of inspection?—Not of the inspection, but it makes it a very unpleasant thing to the public in general, from there being only one thoroughfare into the market. We want an opening to go into Paternoster-row, to go out another way, because those waggons that come into the market with meat are obliged to stop and unload, and then those that are behind frequently have to stop an hour, instead of getting away in half an hour.
608. Is there insufficient means of entrance into Newgate market?—Yes; they want a better entrance, and a way to go through it, very badly.
609. Do you think that if the entrance were sufficient in size, the market would afford accommodation for the sale of the meat?—It would afford very great accommodation. The greatest part of the houses round Newgate market belong to private persons; there is only a little part in the interior of the market that belongs to the Corporation. The quantity of meat that is sold there is beyond what any person would credit.
610. Is there any means of ascertaining the quantity of meat annually sold in the market?—Not very well; I should say it is some thousands of tons weight.
611. Can you point out to the Commissioners any means by which they can arrive at a probable estimate of the total quantity?—Not very well.
612. Is there more bad meat found by you from information given to you by other persons than from your own observation?—I find more out by my own observation than I do from being sent for.
613. Do the salesmen allow their men after market hours the use of their stalls to expose inferior meat for sale?—That is done on Saturdays and Fridays: when the salesmen have gone, they give their men leave to sell a great deal of poor meat after they have done their wholesale business.
614. Inferior and stale meat?—Yes.
615. That would not be the meat that you would condemn?—No.
616. It is poor meat, but not bad meat?—Yes; poor meat, but not bad meat.
617. The meat that you condemn is not inferior meat, but bad?—Yes; or meat that has been physicked; many people physic their cows and bullocks; there is not one person in twenty that would understand it. A physician told me himself that meat that has been physicked is not fit for any human person to eat. There have been scores, I may say hundreds, of them that I myself, when a salesmen, have sold, of that sort of meat, so that I know the fact.
618. Has the meat that you have had to condemn in the summer weather gone bad from remaining unpacked?—Sometimes it has come up as green as a cabbage, and then it stinks terribly, and they could do nothing with it; it has been boiled down for the fat frequently.

[*The Witness withdrew.*]

Mr. John Benjamin Kentish examined.

Mr. J. B. Kentish.

619. What office do you hold in connexion with Newgate market?—I am beadle of the market.
620. By whom were you appointed?—By the gentlemen of the Markets Committee.
621. What is your remuneration?—I receive 2*l.* 5*s.* per week.
622. From what fund are you paid?—From the rental of the market.
623. What are your duties?—To act as a general police-officer.
624. In what manner do you act?—To prevent all disorders; to carry out the orders of the Markets Committee; and to see that there are no obstructions to the thoroughfare, as well as we can. From the confined nature of the thoroughfare, of course there naturally will be some obstructions.
625. What are your hours of attendance?—From five in the morning to eight in the evening.
626. Do you actually attend during those hours?—Either myself or my deputy. We are both there during the time of business. By the permission of the Markets Committee, after the business is over, then only one or other is to be in attendance.
627. Who is your deputy?—His name is George Cooper.
628. By whom is he appointed?—By the Markets Committee.
629. What is his remuneration?—1*l.* 6*s.* per week.
630. Are his duties similar to yours?—Precisely so. He takes orders from me.
631. Does your authority extend over that part of the market which is not Corporation property?—Yes: all the thoroughfares leading from the general thoroughfares outside the market into the market; all the alleys, courts, and avenues are under our control.
632. You are aware that part of the shops in the market are not Corporation property?—Yes.
633. Does your authority extend to those shops?—Yes. In order to meet that, I am furnished with authority from the Commissioners of Sewers and Pavements.
634. The City Commissioners?—Yes.
635. You mentioned that the chief entrance into the market is confined; does inconvenience arise from the narrowness of the entrance?—Very much so.

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636. Just describe the nature of the inconvenience?—There is only one carriage entrance into the market, and that is about 7 feet 9 or 10 inches wide, only sufficient width for one train of carriages to pass up or down at a time, leading into the area of the market, which is set apart for the reception of carts and waggons. I think it is about 70 feet by 40 feet, so that it will only receive a very limited number of carts or waggons; and of course frequent obstruction is caused by the confined space and the narrowness of the carriage-way.

637. Do all the carts and vans which bring meat to Newgate market pass through that entrance?—All that go in are compelled to do so. Many remain out in Newgate-street. By our regulations, all carts and waggons are to pass from Newgate-street, so that all that wish to go into the market must necessarily enter Warwick-lane from Newgate-street, and go up Warwick-lane, through Hart-street, to the market.

638. Do the majority unload in the market or at a little distance from the market?—I should say that the majority come into the market.

639. Does much inconvenience arise from the narrowness of the entrance?—Decidedly. It is admitted on all hands.

640. In what manner is the meat usually brought to the market?—It is brought by vans and waggons from the termini of the different railways.

641. In boxes or in hampers?—Principally in hampers.

642. When it is unloaded at a little distance from the market, how is it brought to the market?—It is brought by trucks, if it is too heavy for the men to carry. The Markets Committee have given me instructions not to summons any porter using a truck, though it is contrary to the Act of Parliament. In order to facilitate the business, those hampers containing from 3 to 12 cwt., which it would be impossible for the men to carry, they are permitted to take on trucks upon the footways of the market, under certain restrictions.

643. Supposing meat to be brought into the market, is there sufficient room for unpacking it and exposing it for sale?—Certainly not.

644. Is the space of the market insufficient for its present purposes?—It is.

645. Has there been an increase in the quantity of meat sold in Newgate market, of late years?—I am now in my seventeenth year, from the time when I was appointed beadle of the market, and there has been a very large increase during that period.

646. Can you point out any means by which the Commissioners could obtain an account of the quantity of meat annually sold in Newgate market?—The officers have no means of ascertaining it. It would only be obtained through the medium of the clerks who superintend the delivery, from the different van officers of the large carriers.

647. Do you think an estimate could be made approaching to the truth?—Yes; I think if those firms which have the delivery of the meat would give a return; but that is the only way in which I think it could be ascertained.

648. How many may those firms be?—There are several who have the principal deliveries of meat. There are Pickford, and the Eastern Counties, and Younghusband, and many other carriers whose names I can give.

649. Do they keep an account of the deliveries?—They are obliged to do so in order to obtain the money that they charge for the delivery.

650. Did you ever hear any estimate made of the quantity of money that annually changes hands in Newgate market?—Never.

651. The salesmen must have an account of everything that is sold?—Yes.

652. How many salesmen are there in Newgate market?—I should think about 140, at a rough guess. They have increased wonderfully. I have the names of the salesmen 60 years back, which I had from a very old salesman; he mentioned it to show the vast increase of salesmen. It was Mr. Samuel Matthews, who is now alive, aged 81 years. He has two or three sons in the market, who are now carrying on business there. This old gentlemen mentioned the names, and said that 60 years back there were only 11 wholesale salesmen in Newgate market, and I put the names down on paper and kept it.

653. Can you trace the increase in successive years up to the present time?—No.

654. How many do you think there were when you were appointed 17 years ago?—There has been a considerable increase since, but I suppose there were about 100 then.

655. How do you ascertain the number and the names of the salesmen?—All our shops are numbered, and each being a distinct business, that will give a pretty good idea.

656. If the Corporation were to ask for such a return as has been suggested, would those salesmen give it to the Corporation?—As a matter of courtesy, they might do so.

657. There is nothing in the arrangements they have with the Corporation to require it?—I think not.

658. Can you suggest any means by which increased access could be given to and from the market, so as to remove the present inconvenience?—A carriage-way out of the market in the opposite direction would facilitate the business very materially. A very great portion of the obstruction now is in Warwick-lane, and hence Newgate-street becomes obstructed also from the narrowness of the street. When I see the market full of waggons, I place my man at the bottom of Hart-street to prevent anything further driving in till the waggons in the market are unloaded and gone out. During that time the whole of Warwick-lane remains blocked: nothing can pass.

659. Is considerable obstruction created in Newgate-street by the vans and waggons which unload for Newgate market?—Very considerable.

660. Is there obstruction also in any other street in the neighbourhood?—There is obstruction caused in all the thoroughfares around the market and Paternoster-row, by the tradesmen's

carts that come for the purpose of loading the meat away, the officers are obliged to put them in any place that they can possibly get into.

661. What is the principal day for Newgate market?—Saturday.

662. To what is that owing?—To the large supply of meat which they have upon that day.

663. Is not the large supply owing to the large demand?—Certainly.

664. What is it that causes the large demand on Saturday?—The shopkeepers purchase more largely to meet the demand of their customers.

665. What class of shopkeepers purchase on Saturday?—All classes of butchers.

666. Is not the crowding on Saturday in the market very great?—Very great indeed.

667. Is there any retail trade in Newgate market, or are the customers entirely butchers or innkeepers, and persons who buy for a large consumption?—We have a very extensive retail trade more so now than ever. At the time when the vegetable market was done away; one of the arguments was, that it was to be made a decidedly wholesale market; but we have now more retail business than ever, from the fact that after the wholesale business is over many salesmen let off their premises to a second party to come in as a retail butcher; to retail the meat there, for which they either pay a commission or a rental; and some of the wholesale salesmen likewise allow their men to retail. We have thousands of persons now on a Saturday as retail buyers.

668. Do those men often expose inferior and stale meat?—Not unwholesome meat. It is inferior meat; but if they expose unwholesome meat, the inspector would seize it.

669. You do not think there is any unwholesome meat sold in the market?—There is not, because it would be my duty to prevent it, and to call the attention of the inspector to it.

670. Are families ever supplied with meat from Newgate market?—Yes, constantly.

671. Can a single joint be sold there?—Yes, thousands are sold there.

672. Are not the great majority of the customers butchers and persons who buy for a considerable supply?—Yes, that is the principal trade of the market. Then after that business is over, housekeepers or any persons going in there may purchase whatever they feel disposed to pay for.

673. Is the majority of the meat sold at Newgate market beef or mutton?—That is a question which I cannot answer. We have such large quantities of both that I could not state that. We have a very considerable quantity of town-killed beef which has been purchased in Smithfield and slaughtered in the public slaughter-houses. I suppose, as many as 1700 or 1800 carcasses of beef per week.

674. You have said that inferior meat is sold retail in the market. Is there also first-rate quality meat sold retail?—Yes, we have some first-class retail butchers.

675. Housekeepers can buy retail, either first-rate quality meat or inferior?—Yes, according to the price which they feel disposed to pay.

676. Do you happen to know whether the average price of beef and mutton is less in the market to a retail customer than it would be in the shop of a butcher in any other place?—Yes, I think there would be a difference.

677. The public have the benefit of it?—I think the public have the benefit of it.

678. You spoke of the carriage-entrance to the market. Are there other entrances to the market?—There are four foot-entrances besides the carriage-way. There are two private entrances also, by which the trade passes to and fro; but they are not public entrances, and are closed every night.

679. Is much meat discharged through those foot-ways?—Yes.

680. But there is great difficulty in getting the meat into the market?—Very great.

681. Will you state the width of each of the foot-ways?—Rose-street, leading from Newgate-street into the market, is the widest. It is a wide paved passage. I think it is about 13 feet 6 inches wide, which leaves about 9 feet 6 inches clear way, when the boards which are attached to the premises are put down for the purpose of business.

682. Then it is by those passages that part of the meat that is unloaded from carts gets into the market?—Yes.

683. You have said that there is great difficulty in getting into the market. Is there also difficulty in getting from the market?—There is.

684. Have not the salesmen great difficulty in unpacking their supply from the want of sufficient space?—They have at times, under the pressure of business, when they have very large consignments.

685. Is there much damage done to the meat for want of room?—I am not aware of that. I should not apprehend that there is material damage done to the meat; it causes an obstruction from the hampers and packages being thrown upon the public thoroughfare.

686. Is there not loss to the owners from the meat being kept over and becoming stale?—Yes, there must necessarily be loss if the meat becomes stale, and there is not a quick sale for it.

687. Does that often arise from the want of room, and the difficulty of unpacking?—I think not from that cause. I think it is from want of trade, from the want of demand. I do not think the deterioration in the value of the meat itself would be caused by the want of room to unpack, but from the want of purchasers.

688. Is there plenty of room for unpacking it and exhibiting it?—No, there is not.

689. If there is not room for unpacking it, do not the owners suffer in consequence of their property not being exhibited?—The effect of the meat being unpacked and lying upon the pavement is to cause confusion and obstruction to the public thoroughfare, if it lies longer than it ought to do; but as an officer of the market, I am compelled to give way in consequence of the great supply of meat, and the men pitching it from different waggons; therefore, the

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thoroughfares necessarily are obstructed. The meat is not pitched inside the shops, but upon the public thoroughfare.

690. Can customers come and see the meat?—Yes, on the foot-way. It is hung up inside or outside the shops, and can be inspected.

691. Do the owners of the meat suffer from their property not being properly exhibited to the customers, or is it that there are not customers to buy it quickly enough?—The injury arising to the meat is from the want of customers; the trade is not considered sufficiently brisk for the supply of meat; the supply is greater than the demand for it, and then of course the meat must hang till the following day.

692. Is there, on account of the want of space in the shops, difficulty in unpacking the hampers and boxes of meat?—Yes, there is difficulty. If there were sufficient space to hang up the meat in the shops, the foot-ways would be cleared sooner; but as every hook is full, it has to remain in the hampers and packs till they have sold off a portion of the meat.

693. Consequently there is a delay in unpacking a portion of the boxes or hampers?—There is.

694. If the unpacking is delayed, will there not be some disadvantage to the person who consigns the meat?—It must be so, if the sale is lost.

695. Is there much slaughtering in the cellars under the shops in Newgate market?—Yes.

696. Is the slaughtering confined to sheep and lambs?—Sheep, and lambs, and calves, except that there are two slaughtering-houses in Rose-street, Mr. Carter's and Mrs. Ward's, where beasts are killed.

697. Are those under shops connected with the market?—No, they are private property.

698. Are there any cellars for slaughtering under the shops belonging to the Corporation?—There are none. The cellars in which the animals are killed are private property, under houses around the market, not belonging to the Corporation.

699. Are there any cellars under the shops in the market, strictly so called?—None, except in the Poultry market; but there is no slaughtering there.

700. Are there any cellars under shops contiguous to the market, but not on Corporation property?—Yes.

701. How many may there be?—I think to almost every house there is a cellar in which killing is done, not every house, but nearly so.

702. Does the killing go on from day to day?—Yes.

703. And continues up to the present time?—Yes.

704. Can you form any conjecture of the number of animals killed in the course of a week in those cellars?—I cannot.

705. Not in summer time?—No, nor in any time.

706. Is the number considerable?—Yes, very.

707. Would you count it by hundreds, or by thousands?—By thousands.

708. In how long?—During a week.

709. Is the fact of the slaughtering in the cellars within your knowledge? have you seen sheep driven down the steps?—Yes; I have had complaints made to me of misconduct on the part of the drovers and butchers, in carelessly putting them down; that the sheep have been thrown down in a cruel way; but they do not dare do it while the officers of the Corporation are standing about.

710. At what hours of the day or night does the slaughtering go on?—During the whole day; sometimes sheep are brought in at seven and eight o'clock in the morning, and it is kept up during the day to suit the convenience of the parties.

711. Are the sheep that are bought at Smithfield driven to Newgate market?—The majority of them are.

712. Is the slaughtering principally confined to the days on which Smithfield market is held?—No, it is every day; sheep are purchased in Smithfield, and driven to the sheds or fields belonging to the owner of the sheep, and then he kills them according to his convenience or trade.

713. Do you know whether many of the persons who attend Newgate market also attend Smithfield market?—The majority, I believe.

714. Of course the question applies to the two days on which Smithfield market is held?—Yes.

715. Is not Saturday the principal day for Newgate market?—It is; but we have considerable trade on other days; Mondays, Thursdays, Fridays and Saturdays are our principal days; on Mondays and Fridays we have many customers from the villages around London, who go to Smithfield, and afterwards come to our market.

716. What addition to the area of Newgate market would make it, in your opinion, sufficient for its purposes?—As large again.

717. Would you retain any portion of it as a poultry market?—Yes; I think the business ought to be concentrated.

718. If the size were double, would that be sufficient for the wants of the market?—I think it would for the present number of salesmen.

719. Would it be necessary to enlarge the entrances considerably?—Certainly; in the leading thoroughfares, and particularly in Rose-street, the salesmen live opposite to each other, and therefore, each party having his number of packs of meat thrown down before his door, it tends very materially to obstruct the general thoroughfare, more so than if the property on both sides belonged to the same individual.

720. Is there much crowding and confusion in the market on Saturday morning?—Yes.

721. Is it sufficient to prevent a convenient examination of the meat, and to create difficulties in the way both of purchasers and sellers?—No, I do not apprehend that.

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722. It is rather an inconvenience to the persons that attend the market than a detriment to either party?—It is an inconvenience more than a detriment.

723. Is not the evening market equally crowded?—More so, with retail business.

724. What is the effect of the proximity of the dead and the live meat markets upon the price of meat?—From what I have heard from the salesmen, I should say it is their prevailing opinion that it would be very necessary for the dead market to be near the live market.

725. Is that the opinion of the butchers also?—Yes; there appears to be a prevailing opinion to that effect.

726. Is that your own opinion also?—Yes, it is, regulating my opinion by others who know better upon that subject than myself.

727. You have spoken of public slaughter-houses; how many of those are there at Newgate?—We have only two in the market where beasts are slaughtered.

728. Do you know of others in the neighbourhood, where the salesmen of the market send their beasts to be slaughtered?—Not in the immediate neighbourhood; we have several a short distance on the other side of Smithfield.

729. How many of those public slaughter-houses do you know of in or near the market?—I think there are six.

730. Are they subject to any kind of inspection?—Yes.

731. By whom?—By the inspector acting under the Commissioners of Sewers; he has authority to go in and see their state at any time.

732. Does his inspection equally apply to private slaughter-houses?—Yes.

733. Can you give the Commissioners any information with regard to any irregularities committed in the slaughter-houses, or the abstraction of parts of animals that are slaughtered, that have come under your cognizance?—We have had no complaints since the passing of the New Regulations. Since the new Act of Parliament came into operation they have been much better regulated, and they have been more cleanly.

734. Do you think the price of beasts is raised by the markets being contiguous?—I think it is more generally convenient.

735. Convenient to the purchaser, or to the seller?—To both, their interests are bound up together. When a salesman in the market goes over to Smithfield, it is an object to him to get back to his business as soon as he can.

736. Is the price of beasts lowered or raised by the proximity of the two markets?—That I am unable to say; it is convenient to the trade generally, as soon as they have finished their business in one market to go to the other as quickly as possible.

737. Is it not the case that the butchers give a larger or a smaller price for live stock depending upon the quantity of dead meat in Newgate market?—I am not aware what effect the dead meat has upon the price of live stock; I should apprehend that if there were a very large supply in Smithfield, it would have an effect upon the dead-meat market.

738. You said that nearly every house in Newgate market had a slaughtering-place; can you state the number of houses that have slaughtering-places in connexion with Newgate market?—There are 29 cellars, and 12 whose slaughter-houses are on the ground floor; these are for sheep, lambs, and calves, and 2 for beasts—altogether 43, not including the College-market, nor those in Warwick-lane.

[The Witness withdrew.]

Mr. Charles Fisher examined.

Mr. C. Fisher.

739. What office do you hold in the City of London?—General Inspector of Meat for the City of London.

740. Is the office created by Act of Parliament?—Yes.

741. By what Act of Parliament?—The Act of Parliament 11 and 12 Vict., cap. 107, for the prevention of the spread of contagious or infectious diseases among sheep, cattle, or other animals.

743. When were you appointed?—I was appointed on the 10th of March, 1849.

744. By whom were you appointed?—By Sir James Duke, the Lord Mayor at the time.

745. What is the remuneration which you receive?—150*l.* a-year.

746. From what fund does your salary come?—From the Corporation. I am paid by the Chamberlain of London.

747. What are your duties?—My duties are to inspect the butchers' shops and slaughter-houses, or anywhere wherever meat is exposed or offered for sale.

748. Within the jurisdiction of the City?—Within the City only.

749. How much of your time do your duties occupy?—The whole of my time. I have written instructions to devote the whole of my time to my duties.

750. Do you in fact devote the whole of your time to your duties?—I do. I am not restricted to any time. I use my judgment as to the time for inspecting.

751. Do you pass the whole of each day in inspecting slaughter-houses and butchers' shops?—Yes; I go at various times in the day, early in the morning, and also in the evening, depending upon circumstances.

752. Have you a list of all the slaughter-houses in the City?—I have.

753. How many are there?—There are 142 registered. They are all obliged to be registered now according to the City Sewers' Act.

754. Who keeps the register?—That is kept at the Sewers' Office, Guildhall.

755. Then is it not your duty to keep the register?—No.

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756. Are you furnished with a list of the registered slaughter-houses?—I applied at the Sewers' Office for a list, and was furnished with one.

757. Is the registration ministerial, or is any discretion used as to admitting a slaughter-house to register?—All the existing slaughter-houses on the 1st January, 1849, were obliged to be registered within three months from that date; since that time no new slaughter-houses can be set up in the City.

759. Will not the effect of this regulation be to give a monopoly to the existing slaughter-houses?—Perhaps it may.

760. Does the Act provide any machinery for diminishing the number of existing slaughter-houses?—The Act states that if the owner of any slaughter-house discontinues killing, and uses such slaughter-house again without registering, he is liable to a penalty of 5*l.* each day it is used.

761. If the number is limited by law, will not that be a strong inducement to keep up every existing slaughter-house?—Certainly it will.

762. If the consumption of meat in London increases, will not the value of the existing slaughter-houses be increased?—I should think it will.

763. What is the state in which you find the existing slaughter-houses?—I find them in a much better state than they were formerly, since they have been inspected more narrowly by the Sewers' Inspectors, and they are kept cleaner than they were. I consider they are kept as clean as they possibly can be.

764. Are they kept in a state which prevents them from being a nuisance to the neighbourhood?—I do not consider that the slaughter-houses are a nuisance to the immediate neighbourhood where they are.

765. Do you think that they are at all detrimental to the health of the neighbourhood?—Not in the immediate neighbourhood of the slaughter-houses.

766. Do you think that there is any disadvantage in the system of slaughtering within the limits of the City?—I think that slaughter-houses have an injurious tendency away from the locality where they are situated.

767. How does that arise?—A great portion of the offal and blood, and the washings of the slaughter-houses, go into the sewers, and are driven away while in a fresh state, and which I consider may afterwards decompose in the sewers at a distance from the slaughter-houses, and have an injurious effect on the health of the inhabitants generally.

768. What do you think was the reason why, in the Act regulating the City sewage, it is prohibited that any new slaughter-house should be opened after the date of the Act?—I suppose it was to gradually do away with them.

769. Why is it wished that they should be gradually done away?—Because I suppose they are considered by the Legislature to be injurious to the health of the inhabitants of the City.

770. Did you not state that, in your opinion, they are not injurious?—Yes; I stated that I do not consider them injurious to the immediate localities where they are situated, in consequence of everything being fresh about them.

771. From anything that comes under your observation, do you think it desirable that slaughter-houses within the City should be prohibited?—I think it is desirable.

772. For what reason?—For the reason I have stated, that I consider they are, in a slight degree, injurious to health.

773. Is there any other reason?—No, I have no other reason, except the nuisance of driving cattle through the streets in the middle of the day. Yesterday, for instance, at twelve o'clock in the day, I saw a lot of cattle driven into the slaughtering-houses in Whitechapel, which might have been done early in the morning.

774. Have you any power of closing slaughter-houses in the City?—No power at all; in fact, I have not any power to enter private slaughter-houses. My power is very restricted according to the Act of Parliament. My duty is only to look after unwholesome meat exposed for sale, and I inspect the public or common slaughter-houses where meat is sold, those being places for the sale of meat.

775. Who is the person who can give the Commissioners information about the state of the slaughter-houses?—The Inspector of Sewers and the Inspector of Pavements.

776. You do visit some of the slaughter-houses?—My duty calls me into those I have just described.

777. How many slaughter-houses have you visited?—I visit the whole of the slaughter-houses in Whitechapel, and two in Smithfield. I have made seizures there several times, but I have no power to enter any private premises.

778. Do you often seize unwholesome meat?—Very often.

779. Do you think there is much unwholesome meat exposed for sale in the City?—Very little in the City now.

780. Has your inspection been effectual in preventing the sale of unwholesome meat?—Yes, it has, in the City.

781. Your jurisdiction is confined to the City?—Yes; the Act of Parliament under which I act is very deficient in the clause relating to bad meat, it only empowers me to seize unwholesome meat that I may find actually offered or exposed for sale.

782. Do you find that much unwholesome meat comes from abroad exposed for sale?—No, very little; there are inspectors at the water side; on the Thames, at Blackwall, and on the wharfs, who get it before it reaches the City. There is very little unwholesome meat in the City; there is a great quantity of poor meat, but not diseased or unwholesome; and there is a great quantity of bad meat sold out of the City within a short distance, and where I have no jurisdiction.

783. Where there is no City Inspector?—Yes; I addressed a letter some time ago to Mr. Labouchere upon the subject.

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784. Has the inspection in the City the effect of driving the sale of unwholesome meat into parts of the metropolis which are not inspected?—Yes, decidedly; there is a great deal of it sold.

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785. You have no doubt of that?—I know it from facts that have come within my knowledge.

[The Witness withdrew.]

Richard Hicks, Esq., examined.

R. Hicks, Esq.

786. How long have you been in trade in connexion with the sale of meat?—Upwards of 45 years.

787. You are a salesman in Newgate market?—Yes.

788. Do you also deal in Smithfield?—My eldest son is a partner with me in the dead-meat trade, and also in the live trade; he manages the Smithfield trade entirely. Upon other days, he assists me in the dead-meat trade.

789. Your son is a salesman in Smithfield, and you are a salesman in Newgate market?—I have two sons salesmen in Smithfield,—one in foreign cattle only.

790. How long have you been a salesman in Newgate market?—I have been a salesman there all my life. In my early life I was what is called a carcass-butcher; the last 34 years I have been a commission salesman.

791. Are you a tenant of the Corporation at Newgate market?—I hold premises of the Corporation.

792. How many shops have you in the market?—I have one shop belonging to the Corporation, and a house that belongs to St. Thomas's Hospital, and I also rent the front of the coffee-house adjoining.

793. Has the trade in Newgate market increased much in your recollection?—Yes, it has increased; but there is a contradiction belonging also to that statement, for it has also very greatly decreased, and it arises thus,—many years ago Newgate market was supplied from a circle of from 50 to 70 miles round London. I have turned my attention to that subject, and have written out a list of places in the counties of Surrey, Berkshire, Oxfordshire, and Wiltshire, from which myself and other salesmen formerly had a great deal of meat, from which I now have none, or at all events, I had more formerly from one place than I have now from the whole of them put together, [and I am not aware that any other parties have the meat, but the consigners from those places have nearly discontinued sending meat to the London dead markets. In addition to those places, many others in the counties of Bedfordshire, Buckinghamshire, Hertfordshire, Huntingdonshire, and Gloucestershire, also during the first 30 years of my life, sent vast quantities of meat to the dead-market. They also have very considerably decreased in quantity, but not so much as those I first named. From Essex formerly, particularly from Colchester and Chelmsford, and some other places within about 40 miles of London, vast quantities came which have very materially decreased. With regard to the great increase in Newgate market, it is chiefly from Norfolk, particularly the lower parts down to the coast; from Hull—from whence at certain times of the year we have immense quantities of mutton in carcasses; from Lincolnshire, Yorkshire, Newcastle, Barnard Castle, Durham, Liverpool, and Bristol,—also from Cumberland, Berwick, Scotland, and Ireland,—and also from Holland and Germany.]

794. How does that come, by water or by railway?—From Scotland and Berwick, till the railway reached those places, it came by water, and now it chiefly comes by railway.

795. And all the others by railway?—The others all by railway. And from Holland, Hamburg and Bremen, by steam. Those are the places that now supply the great increase, as regards country meat; but a vast increase of business in Newgate market, in my line, arises from what is termed the carcassing trade. I have turned my attention to the question very closely, and I have consulted other persons in whose experience I have some reliance, and I am prepared to state that something like 1200 bullocks a-week are bought in Smithfield market, which are afterwards slaughtered, and the greater portion sold in Newgate market as dead meat. With the permission of the Commissioners I will put this paper in [the same was delivered in, and is as follows,]—

AN IMMENSE FALLING-OFF IN THE SUPPLIES FROM

Surrey.

Bagshot.
Guilford.

Godalming.
Farnham.

Hampshire.

Blackwater.
Yately.
Hartley Row.

Odiham.
Alton.
Basingstoke.

G

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*R. Hicks, Esq.**Berkshire.*

Bracknell.
Wokingham.
Reading.
Wallingford.
Wantage.
Abingdon.

Illsley.
Farringdon.
Newbury.
Thatcham.
Swallowfield.
Hungerford.

Oxfordshire.

Henley.
Benson.
Ewelme.
Watlington,
Dorchester.

Thame.
Chipping Norton.
Banbury.
Bampton.

Wiltshire.

Salisbury.
Purton.
Highworth.
Colne.

Marlborough.
Devizes.
Melksham.
&c., &c.

Beds.
Bucks.
Herts.

Huntingdonshire.
Gloucestershire.

Essex.

Colchester.

Chelmsford.

A GREAT INCREASE IN THE SUPPLIES FROM

Norfolk.
Hull.
Lincolnshire.
Yorkshire.
Newcastle.
Barnard Castle.
Durham.

Liverpool.
Bristol.
Berwick.
Scotland.
Holland.
Hamburg.
Bremen.

796. Has a considerable increase in the total supply of Newgate market taken place in your recollection?—Decidedly.

797. How would you measure that increase?—By the quantity of meat which is now sold in Newgate market.

798. Can you give the Commissioners any idea of the total quantity of meat sold in Newgate market in a year at present?—I cannot.

799. Can you suggest any means of ascertaining it?—No; I do not know how to do it. I hear some persons flippantly state that it is easy to be done. It is a matter on which I am very anxious to get information, and should be glad by any means to satisfy my mind as to the correct returns.

800. Have you compared your own books so to be able to ascertain whether your own transactions have increased of late years?—I think I am doing more business now than formerly, yet that arises principally from the consignments of three men. If one of those three were to give up sending, my business would be decreased very greatly, so as to make it perhaps less than it was at any former time.

801. Has the total number of salesmen increased?—Immensely; the numbers have very greatly increased.

802. Could any return be obtained from the salesmen collectively, so as to get at an approximation to the total quantity of meat sold in the market?—No; it has been tried within the last few weeks by the Corporation, but the salesmen generally declined to answer, and came to me to know what the inquiries meant: I replied, "The Corporation only want to ascertain whether there is an increase or a decrease in the supply of dead meat."

803. Do the tolls taken by the Corporation afford any measure of the quantity of meat sold?—Not the most distant; the Corporation take a sort of commutation.

804. Do the City exact tolls from the salesmen on private property adjoining the market?—I do not think they do.

805. You say that there is a great increase in the quantity: can you give an idea of the proportion of increase? Do you think that the quantity of meat sold in Newgate market is twice as much now as it was when you first remember it?—I do.

806. Do you think it is more than twice as much?—Yes. Those 1,200 bullocks I have mentioned occasion an immense quantity of business. I remember the time, 40 years back, when the variations in price in Newgate market would frequently be three halfpence a pound in two days. Now, from the immense supplies continually coming, particularly from the

carcass butchers, the prices are kept almost as steady as they are at Smithfield. There is always enough to supply everybody, and something beyond.

807. You state that the places of supply have changed of late years; that more comes from a distance and less from the neighbouring counties. Is that change owing to the introduction of steam navigation and railways?—Decidedly.

808. Has the introduction of steam navigation and railways increased the field of supply for Newgate market?—Very greatly.

809. Has it also increased the quantity of dead meat which can be sent in a good state to London?—For two-thirds of the year it has; but in the summer the same parties send their stock alive by railway or steam for us to slaughter. One person that I do business for at Ipswich has spared no expense whatever either in his premises, in his carriage, or in his system of management to get his meat up to London sweet. He has slaughtered it in the morning, and sent it to me for sale by the next morning at four o'clock, and it has come stinking. He has slaughtered it in the evening, and cut it up hot for me to receive it the next morning, and it has come stinking. Meat must be cold through before it is moved to ensure its being in sweet condition; therefore in the summer we have very little supply of dead meat. For years past I have said I should be glad for three months in the year to shut up my premises and discharge my establishment, could I begin again when I come back, and keep my connexion on, and should be money in pocket, because I cultivate very little town business.

810. Is the quantity of meat sold during the three hot months of the year much less than during the other months?—Immensely less.

811. How would you measure the proportion?—I can hardly make a comparison wide enough apart; it is not one-tenth, I should say, not one-fifteenth certainly as regards myself. For instance, all the Scotch supply is stopped, and that is the great supply of dead meat to Newgate market.

812. Would not the neighbouring counties have the advantage during the hot months? cannot they send up dead meat?—No; from such places as Bury St. Edmunds and Ipswich they cannot get their meat in a sweet condition to London. I receive it up from Suffolk in four hours. My friend there tried every scheme this last summer to send it up sweet, but it was frequently stinking.

813. During the cold weather, is the country meat that is slaughtered in the country and sent up better than that slaughtered in London?—I do not think there is a great difference now; there was some years ago, but since the cattle have nearly all come by railway, it makes but very little difference. The cattle are now slaughtered from Smithfield as fresh in condition, and the meat is as blooming in its appearance, as that from the country: there is not the difference there formerly used to be when the beasts travelled from 70 to 120 miles on the road.

814. You are aware, from accounts which you yourself laid before Committees of the House of Commons in the year 1847, and in the last year, that the number of sheep sold in Smithfield has been stationary for the last 20 years, whereas the number of cattle sold has increased considerably?—Yes.

815. Do you believe that the consumption of beef in London has increased more in proportion than the consumption of mutton?—No, I do not.

816. Then how do you account for the stationary number of sheep sold in Smithfield?—There is about the same demand for sheep now that there was some years ago.

817. Has not the population of London, and the wealth of London, increased in the last 20 years?—Decidedly.

818. Would you not expect that the consumption of mutton would increase in the same proportion as the consumption of beef?—Yes; but I think the supply to the dead-meat market has greatly increased in mutton. I have stated before a Committee of the House of Commons that is the reason why the supply of sheep in Smithfield has not increased; and I said that Smithfield, in my opinion, has seen its best days as regards its supply of mutton.

819. Then the vacuum has been supplied by dead meat?—Yes.

820. Then your view is, that the stationary number of sheep sold in Smithfield is to be accounted for by the greater quantity of mutton sent in a dead state to Newgate market?—Decidedly.

821. Can you explain why it should be more profitable to send up mutton than beef in the form of dead meat to London?—I do not know that I can explain it to the satisfaction of the Commissioners, but I can feel it to my own conviction. I can state this, that a great quantity of mutton comes in carcasses and in hind-quarters. From one man yesterday I received 103 pairs of hind-quarters, not one sheep. He is anxious to know what parts of meat are required in London, for he can sell the rest at home; and the same with other parties, they keep at home what is not wanted in London, and by that means get a higher price for that which suits the London butchers, who come from the West End, and require only certain parts; they want hind-quarters of mutton, and legs and saddles, and the best ends of necks of mutton. They do not want sheep. You would be surprised at the fastidiousness of the West End butchers as to the quality of what they require. They buy bullocks in Smithfield, and they buy sheep also; but for every sheep they buy it is probable that they want the hind-quarters of two more sheep; and for every bullock that they buy alive, many of them in the London season want the roastings of at least five or six more bullocks, and they come to Newgate market for their supplies. But many of them will buy a lot of sheep dead that will not buy carcass-beef dead at all. It would not suit them to buy their carcasses of beef dead from the way in which they would be shaken about, and the inconvenience of coming to buy them and

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getting them home, and the additional strength they would require of horses, carts, and servants. There would be great additional trouble and expense, as compared with a bullock walking home from Smithfield, so that there never can be an analogy between the supply of dead beef in Newgate market and dead mutton. Then again, if Smithfield has 5,000 bullocks, and 4,000 would be enough to supply the demand for the day, an abatement of about 10s. a bullock would clear the market; but if the dead-meat market is over supplied, particularly in warm or damp weather, the depreciation is so great, that upon beef it would frequently amount to as much as from 2l. to 3l. or 3l. 10s. upon a carcass that has been slaughtered as far distant as Norwich. A sort of public slaughter-house has been built at Norwich six years ago. Several parties have entered into it, and endeavoured to induce the graziers to slaughter their cattle and send them up dead; but the price upon the average upon the dead beef has been so much lower than the live market, that it has been a total failure; and I am satisfied that the slaughtering cattle by graziers to send up to the dead market instead of the live market will never answer.

822. If the animals are to walk up to London from a considerable distance, is there not an advantage in making cattle walk rather than sheep?—I think cattle will travel better than sheep; but I am perhaps hardly competent to speak to that, never having followed behind them. There is this distinction, when sheep have got their coats off, they can travel better; but when they have got heavy coats of wool, they travel badly.

823. Then during part of the year, when their coats are long, the sheep travel on their own legs worse than cattle?—Yes.

824. With regard to railways, is there any advantage in sending live cattle rather than live sheep by railway?—I am not aware of any.

825. Is there any advantage in sending live cattle rather than live sheep by steamer?—I think that sheep come by steam better than the cattle, upon the principle that they are a lighter substance, and they are less knocked about by the motion of the vessel; the condition in which the cattle come by steam is sometimes dreadful; and after they are slaughtered they are damaged immensely, particularly after long and tempestuous voyages.

826. Is it the fact that more mutton is sold in Newgate market than beef?—That is a question I hardly know how to answer, because, as I before stated, there are about 1,200 bullocks bought in Smithfield and chiefly sold in Newgate market; but if the question refers to dead meat from the country, I answer, decidedly.

827. Taking the whole quantity of meat sold in Newgate market in the course of a week, is the quantity of mutton sold greater than the quantity of beef?—I do not think it is. I question whether it is so much, taking weight for weight.

828. Since you have been in business, has the proportion of mutton sold in Newgate market increased more than the proportion of beef?—I do not think the total quantity has; but if you put the question, with reference to the quantity coming from the country dead, I should answer the question otherwise.

829. What do you say as to the size of Newgate market. Is the accommodation sufficient?—Certainly not.

830. Are the entrances into the market adequate?—Certainly not.

831. What enlargement would you think necessary?—I should enlarge it; and I have drawn a plan for the purpose, so as to make it more than as large again.

832. How many entrances are there into the market?—There are two of 16 feet wide, two of 10 feet wide, and three others.

833. How many of those are accessible to wheeled carriages?—Only one.

834. Is there much obstruction caused in the neighbourhood of the market by unloading vans and carts?—Very great.

835. Is considerable inconvenience caused to the neighbourhood by the want of accommodation?—Decidedly.

836. What do you say as to the slaughtering under the shops?—It ought to be done away with.

837. Does it prevail to a considerable extent?—Yes.

838. Can you form any idea of the number of animals killed under the shops in the course of a week?—No, I cannot form an idea, but a great many.

839. Would you reckon the number slaughtered in the course of a week, in summer, by hundreds or by thousands?—By hundreds; there are more in summer than in winter.

840. Are you speaking from any correct knowledge which you possess yourself?—Yes, decidedly so; round the market.

841. Do you think the practice of slaughtering in the cellars has diminished of late years?—I do not think of late—the last two or three years—there has been so much as there was formerly.

842. Has that been owing to the use of other slaughter-houses in London, or to sending up more dead meat from the country?—I think, to the supply of dead meat from the country.

843. Do the present communications by railway and by steamers give great facilities for sending up dead meat to London?—Certainly.

844. Judging from the experience of the last few years, would you expect that the quantity sent up would continue to increase?—I do not myself look to a great increase; for I think, from all parts, as much has come as they have had to send.

845. Do you think the demand for dead meat among the salesmen of Newgate market is likely to increase?—They would have no objection to an increase, because, of course, their profits depend upon their returns.

846. But do you think that their power of selling will increase?—I think it is not likely to

increase much beyond the amount we have had for the last several years, because we have had a supply generally beyond the demand; and as soon as that is the case, remunerative prices stop. The great supplies come from butchers, and not from graziers.

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847. Who are your principal customers in Newgate market?—The West End butchers are our principal customers.

848. What is the proportion of the purchases of the West End butchers to others?—Two-thirds of all the prime meat that comes to Newgate market is bought by the West End butchers.

849. Besides the West End butchers, who are your principal customers?—They come from all parts—from the suburbs, Surrey and Kent—very few from the East End.

850. Is your business principally a wholesale business—do you sell principally to butchers?—Almost entirely—there are exceptions—if things are lying about, and any person comes and asks the price, they may have them.

851. Is there no business done with innkeepers and cookshop-keepers?—A great deal of business is done with cookshop-keepers; but they come round in the morning with the butchers.

852. Is there any quantity of meat sold to private families?—There is.

853. A considerable quantity?—Yes, an immense quantity of rubbish.

854. Is the meat that is sold to private families in Newgate market generally of an inferior quality to that which is sold to butchers?—It is hardly to be termed for “private families;” persons of the lower classes come round to look for cheap meat, and it is meat that is bought of salesmen of a lower character.

855. Is the substantial trade of the market a wholesale trade?—Decidedly; and I should be glad if we were compelled to close the market at a certain hour.

856. Are you concerned in the foreign trade, or are any foreign beasts consigned to you?—Yes; my second son has the management of that branch.

857. How is that trade managed?—how are the orders sent?—The cattle are consigned direct by the owners to the salesmen in Smithfield.

858. Are they sent over dead, or alive?—Alive.

859. What part of the market does your son occupy in Smithfield?—Like the rest, he is moved about according to supply and accommodation; but my eldest son stands opposite the clock of St. Bartholomew’s Hospital.

860. Are the foreign cattle that are consigned sold in Smithfield market or in Newgate market?—In Smithfield market.

861. Are any foreign cattle consigned to salesmen in Newgate market?—I have not heard of such a case. Foreign meat has been sent dead, but no live cattle have been sent that I am aware of.

862. Does much dead meat come from abroad?—A considerable quantity has come from Hamburg and Ostend, and from Bremen; that is the most distant port, I believe, from which cattle or meat have been sent.

863. Has any been consigned to you?—I have had some meat from Hamburg.

864. What is the quality of it?—Some of it is very good, but the Dutch mutton is inferior.

865. You say some of the meat is very good, is the beef as well as the mutton good?—The mutton is very bad indeed; the mutton even from Germany, from which we have had such beautiful beef, is very inferior.

866. Is it much damaged in the passage?—No, but the bullocks have been much damaged.

867. You stated that the West End butchers did not buy carcasses of beef because you thought it would materially increase their establishments to convey it from the dead-meat market to their places of business; do you apprehend that their expenses in the same way would be increased if there were abattoirs established?—No doubt they would.

868. Would they be materially increased?—Very materially.

869. Would that materially increase the prices of meat to the public?—Yes; I have considered that question very deeply, and have made many calculations, which I have carefully revised, and I have come back to the same opinion that the establishment of compulsory abattoirs would increase the prices of meat something like 1*d.* a pound, and that amounts to 1,000,000*l.* per annum.

870. You say compulsory abattoirs?—Yes, upon the French system; I have in my hand now a communication from the French Consul upon the subject of all that is connected with our meat market and slaughtering, and customs, with a view to improve their own, because they had not found theirs to answer, but the late Revolution put an end to the correspondence. I had several interviews with M. Boisseneur on the subject.

871. You say that those who supply Newgate market are principally butchers?—Yes, almost all the meat that comes from nearly the whole of Scotland (for meat is now sent up to Newgate market from beyond Aberdeen) is all bought by butchers: there are men who buy 5,000 sheep at a time.

872. Do you consider it an advantage, both to the trade and to the public, that the dead and live-meat markets should be near one another?—I think it a very great advantage.

873. How does that advantage arise?—It arises in this way: the dead-meat market is held every day; and the live-meat market is held on Mondays and Fridays. All the parties who have occasion to attend either market require to attend both markets on the same morning: from the competition that there is in the trade, it is very essential for the buyer to know the supplies of both markets, and to be able to attend both markets at the same time; and it is quite a common occurrence for them to be going from one market to the other for an hour or two, in order that they may see where they can buy meat cheapest. It is essential for the live-cattle salesman to know what is the supply in the dead-meat market; and, on the same

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principle, it is essential for the dead-meat salesman to know what the supply is at the live-meat market: the profits of the butchers are drawn to such a nicety that a penny a-stone is an ample profit for the carcass-butcher, and therefore whichever way the butcher sees he can lay his money out to the most advantage, he buys at either the live or the dead-meat market; no doubt he buys something at the live-meat market at all times, because he requires to keep a stock on hand; and as the butchers may be called the representatives of the public, or the caterers for the public, I consider the public has the advantage of that free competition by having the meat charged to them at the lowest possible prices. I have sold meat this day at 1½d. a pound more than the correspondents of the "Times" give the butchers credit for. These are facts I have within my own knowledge, and I think it is exceedingly important for all parties that the dead and live-meat markets should be as near as possible to each other.

874. If one market were to be a mile from the other, would there be any inconvenience?—Very serious inconvenience if the live-meat market were a mile or two miles from the dead-meat market; the small buyers, who ensure to the graziers a fair price for their cattle by the competition which they occasion, would not be able to attend the live-meat market.

875. They would go to the dead-meat market?—Yes.

876. So that wherever the live-meat market is ultimately placed, your opinion is that the dead-meat and live-meat markets should be as near together as possible?—Yes; there are, besides Newgate market, several dead-markets, viz.: Whitechapel and Leadenhall.

877. Is much business done in Leadenhall market or in the other dead-meat markets?—Leadenhall market has a considerable business, but nothing in comparison with Newgate market.

878. Is the business of the same nature; is it transacted by salesmen?—Yes, it is of the same nature.

879. Is it more of a retail business than the business transacted in Newgate market?—No, it is wholesale, and they have their meat from Scotland the same way as we have.

880. How many salesmen are there in Leadenhall market?—I do not think there are many, but I am not competent to give an opinion.

881. About how many are there?—Perhaps about eight or ten.

882. How far is Clare market from Smithfield?—Clare market is in Westminster. I passed the first 14 years of my life in Clare market.

883. Is Whitechapel market all in the City?—No, only so far as Somerset-street. Aldgate is in the City, but Whitechapel is out of the City.

885. Is Saturday the chief day at Newgate market?—That depends upon the parties' business. I do more business on Monday twice over than on Saturday, but, generally speaking, the market is more crowded on Saturday than on any other day.

886. The persons who attend on Saturday have no view of attending Smithfield market?—No, certainly not; but I think we have as many attend on Monday as on Saturday, and very many of the West End butchers only attend Newgate market on Mondays and Fridays.

887. Is the class of persons which attend on Saturday different from the class which attend on Monday and Friday?—Yes.

888. What is the difference?—The persons who come on Saturday are persons who do not come into the market scarcely all the week besides. Some people do not buy any meat in the market except on Saturday, and on Saturday they buy a few sheep and a lamb or two, or something of that kind. Numerically, we have more people on Saturday than on any other day.

889. Do you think that more money changes hands on Saturday than on any other day?—No.

890. Which is the day on which most money changes hands in Newgate market?—I think Monday. Perhaps I think so because I do more myself on that day than on any other day.

891. Speaking generally of the whole market, which should you say was the day on which most business was done?—I think Monday is equal to Saturday, taking the market through. The weight of meat sold on Saturday is of a very different description from that sold on Monday.

892. You said that you sold two-thirds of your prime meat to customers at the West End of the town; does that pervade the market generally?—Yes, I should say so. I may perhaps be allowed to observe, that this question of the supply of meat to Newgate market is no new question. I have letters here which I found the other day, received from carriers in the country. I was engaged on an inquiry in the year 1832, in a Committee of the Corporation, to ascertain whether there was an increase or decrease of meat in Newgate market at that time, and this is a paper which was compiled by myself on the subject, comparing the supply for the months of October, 1818, and 1830, and the result was, that the supply of meat from the country in the year 1830 had decreased one-half since 1818. In October, 1818, there were 8,251 packages, and in 1830, 4,879. This was a discussion which arose in the City Lands' Committee, of which I was a member at that time, and these are portions of letters I had from the carriers at that time, explaining to me how much their business had decreased to Newgate market, and which has still followed on from those very countries and places I named at the beginning of my examination.

893. Was that decrease contemporaneous with the extension of steam navigation and the introduction of railways?—That has given what I may term the finishing blow to it; because, the meat from those places cannot compete with that which comes by steamer and railway. We had immense quantities of dead meat from Kent and Surrey, which now goes to Smithfield alive, because there it commands a higher price than it can command when brought into competition with Scotch and other mutton. I was asked some questions about slaughter-houses, and I have brought with me our Act relating to that subject.

894. Is that a local Act?—Yes. I brought that to show the regulations under which the

slaughter-houses in the City of London are conducted. These [*producing a paper*] are the rules and regulations in respect of slaughter-houses, and this is a paper which is usually published every year, showing what we term the rakers' or scavengers' duties, and I have marked the points which bear upon this inquiry, to show the attention that is paid to all matters connected with the cleanly state of the markets.

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895. You have said that the dead-meat and live-meat markets should be, in your opinion, in close proximity to each other. Are you of opinion that it would be advantageous or disadvantageous to the public if the dead-meat market of London were removed a considerable distance from the spot where it is now held?—I think it would be a considerable inconvenience, because, after the West End butchers, by far the larger number of our buyers come over Blackfriar's-bridge. They are so numerous that I could not give an idea of the number. They frequently come a distance of from seven to ten miles every morning to Newgate market. We have persons from Streatham, and Croydon, and Chislehurst, who, more or less, come daily to Newgate market.

896. Do persons come from Woolwich to Newgate market?—Yes, they come from Woolwich nearly every morning.

897. There is a considerable attendance of customers at the dead-meat market from the south side of the river?—Yes, after the West-End, they are the most numerous attendants at the dead-meat market. Upon the subject of abattoirs, if you will permit me I will leave with you a document that I have; it is the translation of a Report from the Minister of the Interior to the late King of the French, upon the subject of abattoirs and the butchers of Paris. The original of which it is a correct translation, is called the "Almanac de Butcherie for 1847," and there is in it everything connected with the markets in Paris.

898. How many slaughter-houses are there in Newgate market?—There are but two slaughter-houses in Newgate market for cattle, and something like from 20 to 25 oxen a-week is the utmost number slaughtered in both those slaughter-houses.

899. Are those under-ground slaughter-houses or above ground?—Above ground.

900. Are they as well conditioned as other slaughter-houses?—Yes, they are very well conditioned.

901. Are they in Rose-street?—Yes, both of them. A great deal has been said about slaughtering in London, but I happen to know that within the walls of the City there are but three slaughter-houses for beasts, and taking the slaughter-houses outside the walls, but within the liberties of the City, I think thirteen is the maximum number of houses where beasts are slaughtered, except Aldgate High-street.

902. Does not the present Act prohibit any new slaughter-houses in the City?—Yes.

903. Do you consider that a wise regulation?—No, I do not think it is just. There was a meeting of the trade held 20 years ago; the butchers called a meeting in order to pass a vote of censure upon me for having taken steps to do away with under-ground slaughter-houses, and I walked into the meeting, and I carried a conviction that the time was come when slaughtering in cellars should be done away with; but at the same time I think it just that those who have had cellars under ground in which they have for years slaughtered their sheep and lambs, should be allowed to have slaughter-houses above ground, because there need be no nuisance whatever to the public by slaughtering above ground, where they are properly conducted.

904. As the law at present stands, a subterranean slaughter-house cannot be closed?—Yes, that is the state of the law in the City, but the Sewers' Commission are coming to Parliament next session, and they want power to do away with slaughtering below ground. I will support them in that, but at the same time, you should give the parties whose slaughter-houses you remove an opportunity of having slaughter-houses above ground where no one will be inconvenienced. I may perhaps be allowed to observe, that I think there is every opportunity for enlarging Newgate market, and making ample accommodation for all the business that is done there, and relieving the public from all the inconvenience which they now suffer from the want of thoroughfares.

905. How is that to be done?—By the Corporation adopting the plan which I shall submit to them. The public do not suffer more inconvenience from the present want of room in Newgate market than the salesmen suffer. I have frequently been kept waiting for my meat, and the butchers have also been waiting to buy, and though the meat has been only a few hundred yards from our premises, we have been unable to get at it.

906. Do you think that under the present arrangements of Newgate market you can do full justice to those who consign meat to you?—I think not, but I manage tolerably well, because I have extensive premises.

907. You have the best premises in the market, have you not?—No, my shop is in the worst part of the market; it is a corner away from any entrance, which is a great denial.

908. Do the interests of persons who consign meat to you suffer from the present state of Newgate market?—I should say they do suffer, because the meat cannot come in so quickly as it ought.

909. Does any meat spoil from its not being unpacked early enough?—No.

910. Not even in bad weather?—In bad weather we get the meat quickly enough, because there is less obstruction in the neighbourhood, the quantity being so much smaller.

911. In consequence of the delays that take place in unpacking and exposing the meat, does it sometimes happen that you do not obtain the best price for the meat that is sent up?—Yes, sometimes buyers are waiting in order to purchase the best meat, and, as they can stay no longer, they are compelled occasionally to buy what does not suit them so well, and then, when we expose the best meat for sale, we are inconvenienced from not having buyers for the best commodity.

[The Witness withdrew.]

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Mr. Robert Jackson examined.

Mr. R. Jackson.

912. Are you a salesman in Newgate market?—Yes.
913. How many years have you been a salesman?—About nine or ten years.
914. You sell meat on commission in the ordinary way?—Yes, and I am a carcass butcher as well.
915. Is there any difference between a carcass butcher and a commission salesman?—A man who is only a commission salesman has no meat but that which is consigned to him dead, but the carcass butcher buys animals alive and kills them, and then they are sold dead.
916. Do you mean that the carcass butcher sells on his own account?—Yes.
917. What kind of stock do you slaughter?—The principal of mine are calves, and, in the summer time, lambs.
918. How many every week do you slaughter in the summer?—Perhaps about 50 calves and 100 lambs a-week, or even more than that.
919. What is the commission which you receive from the meat you get from the country?—The commission depends upon what article is: on beef the commission is 1*d.* a stone, and on sheep about 8*d.* or 9*d.* each, according to the size, and the same for lambs; and on calves the commission is from 1*s.* 6*d.* to 2*s.* each.
920. Has the trade of Newgate market increased since you became a salesman there?—Yes, there is much more meat sold in the market than there used to be.
921. Can you form any idea of the increase which has taken place within the last 10 years?—No; I should not like to give an opinion without taking time to consider.
922. Will you be good enough to take time to consider, and give us the best conjecture you can form as to the amount of increase in the trade of the market since you have been a salesman?—I will; I should think about five times as much.
923. Do you sell at your own shop?—Yes.
924. Of what dimensions is your shop?—The inside part of my shop is but small; I should say not more than 20 feet by 15, but I have two rails also. My shop joins to a coffee-shop, and I occupy the rails in the front of that shop, and therefore I have a frontage of three times the size of the inside of my shop.
925. That is upon the pavement, close to the carriage-road?—Yes.
926. Do you and your customers transact business upon that pavement?—Yes.
927. How close do the carriages come to you?—Very often within about a foot; in fact, I consider it very dangerous standing there.
928. To what do you attribute the increase of the supply of Newgate market?—I think it is on account of the quantities of meat that are sent from Scotland and Newcastle, and those places from which in former times we did not have any meat whatever sent.
929. Is that owing to the railways and steamers?—I should say it is.
930. Is more beef or more mutton sent to Newgate market?—From the country more mutton comes than beef.
931. Can you explain why it is that more mutton comes from the country than beef?—I think they find it easier to pack and send mutton than it would be to send beef; they prefer to send the beef to London alive.
932. For what reason do they prefer sending the beef alive?—Because the butchers give a preference to what they kill at their own slaughter-houses. After the animal has been killed in the country, and packed and sent up to London, especially in bad weather, it looks very bad as compared with what the meat does when the beast has been killed in London, and, in fact, it would make a day or two's difference in the time that the beef would keep.
933. How many carcasses in the week are brought in that are killed by the carcass butchers in London?—I should say from 600 to 700; added to that, I should say there are a number of beasts which come to Whitechapel and other markets, and which are killed there, to the amount of from 200 to 300, which would make 900 a-week.
934. Is there an inconvenience in bringing packages of meat into Newgate market?—They come in waggons, and they are unloaded in the middle of the market, and the hampers or packages are drawn on trucks to the different salesmen's shops, which causes great obstruction.
935. Is there only one entrance to the market?—There is only one carriage entrance.
936. Do you find considerable difficulty in bringing the packages of meat to your shop?—Yes, there is a great want of more room.
937. Is there want of room for unpacking the packages?—There is; you have nowhere to unpack them, but you must place them in the footway, and almost block up the road for passers by.
938. When you unpack the packages, have you room for exposing the meat?—Sometimes in a full market there is not room to expose all the meat at once.
939. Would it be a convenience to you as a salesman to have more space in the market?—Decidedly.
940. Should you be able to do more justice to your employers if you had more space?—If the meat was all exposed at one time with plenty of room, everybody would have a chance of obtaining a fair market price. If one or two articles are kept back, and we are not able to expose them till after the market is over, in the summer time, it makes a very great difference; in winter it would not make so great a difference, because they would come in for the next day's demand.
941. Have you a slaughter-house under your shop?—No, not under the shop; I have a slaughter-house in Warwick-lane, but that is above ground.
942. Do you slaughter both beasts and sheep?—No, only calves and lambs.
943. Are there many beasts slaughtered in Newgate market?—No, not many; there are

only two houses that are allowed to kill beasts; and I should say there are not 50 beasts a-week slaughtered in Newgate market.

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944. Is it convenient that the live-meat and dead-meat markets should be near one another?—I think it is a very great convenience to the butchers that have to come from the West End of the town and other places; they come first of all to Newgate market to purchase their dead meat; there are many places where they sell a great deal of prime meat, much more than they do of coarse meat; and they either bring their coarse meat to Newgate market to be sold, or they purchase prime meat and then go from there to Smithfield market; perhaps they cannot find exactly what they want there, and they return to Newgate market; perhaps they go backwards and forwards once or twice.

945. Which is the principal day in Newgate market for the sale of meat?—A great deal of meat is sold on Monday; but the greatest part is sold on Friday and Saturday in this time of the year, and Saturday, in the summer, is the principal day.

946. Which is the day on which the greatest amount of money changes hands in Newgate market?—Saturday, in the summer time.

947. Is Saturday the day on which there is the largest attendance of customers?—In the summer time, I should say it is; but at this time of the year, the market is more divided.

948. Is much inferior and old cow meat sold in Newgate market?—There is a quantity of what we call plain meat sold there, but not so much as we have had formerly; I think they are rather more particular than they used to be, since there has been a little altercation with the seuders; the things are consigned to salesmen in packages or hampers, and it is impossible for the salesman to know what is consigned to him till he undoes the hamper.

949. Is any meat sold for 8d. a stone or 1d. a pound?—There has been meat, I have no doubt, sold as low as that.

950. What do you apprehend the buyers do with that meat?—Some of it is cut up by the sausage makers; there is a great difference between what we term plain meat and unwholesome meat.

951. Do you think there is much unwholesome meat sold in Newgate market?—No.

952. Who are the principal purchasers of inferior meat?—It is purchased generally by those kind of people I have mentioned, and cut up into chops and sausages.

953. Is the principal custom of Newgate market wholesale or retail?—The principal is wholesale.

954. What proportion do you think the retail bears to the wholesale?—Not a hundredth part.

955. You do not consider the retail business of the market is of any consequence?—None whatever.

956. Would you propose to change the site of the dead market, or would you enlarge the present market?—I think it very convenient to be where it is, for all parties, provided it was enlarged, but there certainly is not sufficient space in the present site.

957. Supposing the situation of the live-meat market should be changed, would you think it necessary to change the situation of the dead-meat market?—Yes; I think it would be necessary that the dead-meat market should follow the live-meat market.

958. Your opinion is, that the two markets should be as near together as they are now?—Yes; to separate them would be very inconvenient; it would be a very great disadvantage to the consumers.

[The Witness withdrew.]

Mr. James Duckworth examined.

Mr. J. Duckworth.

959. Are you a salesman in Newgate market?—Yes.

960. How long have you been so?—About 20 years.

961. Are you a commission salesman?—Yes.

962. Are you also a carcass butcher?—No; I am only a commission salesman.

963. Has the trade of the market increased much within your recollection?—Yes; a great deal.

964. What amount of increase would you say has taken place within your recollection?—I should say, quite a third; perhaps, more than that.

965. That is to say, supposing the trade were formerly 100, it has now become 133. Is that your meaning?—Yes, or rather more than that I think.

966. Then, supposing that it was formerly 100, what, in your opinion, is it now?—I should think 150.

967. That is, half as much again?—Yes.

968. Does the supply come from a greater distance than it did formerly?—Yes; from a much greater distance; part from abroad.

969. Is that owing to railways and steam navigation?—Yes.

970. Does the meat come up in a better state than it did formerly?—It comes in a very good condition by railway. There are seasons of the year in which it is not in so good a state.

971. Is the railway more convenient than the steamer?—It is more convenient, inasmuch as the meat comes in a better state, but it is not so convenient with regard to delivery in the market; they deliver it so late that that is one great objection to sending by railways.

972. Do they keep the meat at the railway termini?—The porters say that the meat is not brought up to the stations in sufficient time for them to deliver it at the market.

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973. Is much meat spoiled owing to those delays?—Not much, but in bad weather there is some meat spoiled.

974. Do you get more beef or more mutton from the country?—We get more mutton.

975. What is the reason of that?—I have no idea; I suppose it suits them better to slaughter sheep than beasts, and send them dead to London.

976. Do you think it is more profitable to send up mutton than beef?—I should not think that the reason; I think there is more trouble in sending the beef dead.

977. Is mutton less liable to injury in packing than beef?—Yes, I should say it is; mutton comes in a very good state.

978. Is there much difficulty in bringing packages of meat to your shop?—There is some difficulty in that.

979. To what is that owing?—The railways all deliver the meat at one time, and there are so many trucks coming in together with packages of meat that it creates great confusion.

980. Is there a want of room in the market?—There is a want of space where the meat has to be delivered.

981. Who are your principal customers?—Butchers from all parts, principally the West End.

982. Is your business a wholesale business?—Yes.

983. Exclusively?—Yes.

984. Do you sell any joints to retail customers?—Sometimes; for instance, one butcher will require a great many legs, and leave the saddles, and others will require saddles, leaving the legs; if a West End butcher comes and requires 20 pairs of legs of mutton, there will be the rest of the animal left for sale, or if they require hind quarters, there will be the fore quarters left.

985. Is it convenient to have Newgate market near Smithfield market?—Yes.

986. Do many people attending Newgate market come to Newgate market?—Yes.

987. But many who attend Newgate market do not go Smithfield market?—The greater part go to Smithfield market.

988. They cannot go to Smithfield market on the days on which Smithfield market is not held?—No.

989. Which is the principal day of Newgate market?—I can hardly answer that question; Wednesday is rather a bye-day, but the other days are pretty much alike.

990. You cannot distinguish between one day and another?—No; on Monday and Saturday there is the greatest weight of meat sold; it used to be on Tuesday and Saturday. I used to sell more on Tuesday, when the meat was brought by steamboat, but now it is brought by railway, and delivered on Monday morning, for the Monday's trade.

[The Witness withdrew.]

Mr. J. Banister.

Mr. John Banister examined.

991. Are you a butcher resident in Threadneedle-street?—Yes.

992. How long have you been in the trade?—Nearly 20 years. I lived at Windsor previously to that, with my father.

993. What is the nature of your trade?—Retail, exclusively.

994. Do you furnish persons principally near your own neighbourhood?—Yes, and in the West End of the town. I have a large connexion at the West End.

995. How do you buy your meat?—I buy it principally dead. When I first came to London, I slaughtered the principal part of my beasts and sheep, but the slaughter-house that I had was such a distance from my shop that I found it very inconvenient to slaughter my own meat there, and I gave it up.

996. You have no slaughter-house now?—No.

997. When you say you attend the dead-meat markets, what markets do you attend?—Newgate and Leadenhall markets, but principally Leadenhall market, as being the most convenient to me.

998. Do you find the supply of meat in Leadenhall market as good as in Newgate market?—Yes; of course the supply is not equal in quantity to the supply of Newgate market, but it is as great in proportion to the demand.

999. How many salesmen are there in Leadenhall market?—20.

1000. Is their business wholesale or retail?—Wholesale; but a portion of the market is set apart for the retail trade.

1001. Are the salesmen in Leadenhall market commission salesmen?—Yes; but many persons that we call carcass butchers engage rails in the market, and sell their meat, and pay the occupier a commission for the opportunity of selling their own meat.

1002. Do you ever buy live animals in Smithfield?—Not very often. Occasionally in the summer I am obliged to do so, because the meat will not keep; we cannot depend upon the country meat keeping; in very hot weather I buy sheep and lambs on Friday, to be ready for the Monday market, those I get killed by a friend of mine.

1003. Is the accommodation good in Leadenhall market?—Very good.

1004. Are you in the habit of attending Newgate market?—Yes, I buy occasionally there, but not so frequently as at Leadenhall market.

1005. What do you say of the accommodation in Newgate market?—I think it requires enlargement.

1006. Have you found it difficult to transact business in Newgate market?—I have found that more room was required.

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1007. What inconvenience have you experienced?—I have experienced great difficulty in getting the meat away in reasonable time. When I go to Newgate market, instead of my cart being loaded at once and coming away, we have to wait for some time before we can get the meat; it is very often an hour and a-half before I can get my cart loaded.

1008. Do you find any inconvenience at Smithfield market?—No.

1009. Is the space sufficient?—Certainly not.

1010. Can you form any opinion as to the additional space which it would be necessary to have?—The sheep market is, I think, sufficiently large, but I think the beef market ought to be considerably enlarged; two acres should be added to it.

1011. Is there much crowding in the streets in the neighbourhood of Smithfield when the market is full?—Yes, on great occasions, such as we had at the Christmas market, we had droves of cattle all down the streets.

1012. Did you attend the market at that time?—Yes, I went to see it from curiosity.

1013. Did you see the streets in the neighbourhood of the market blocked up with cattle?—Yes.

1014. How far did they reach?—They reached to St. Sepulchre's church.

1015. Did you hear of any other thoroughfares being obstructed?—No, I heard no complaints.

1016. Do you think it necessary for butchers to have a slaughter-house for sheep?—Yes, for sheep, and for beasts if they can get it.

1017. For sheep particularly in the summer?—Yes.

1018. Is there a convenience in the live-meat market and the dead-meat market being near one another?—Yes, very great; the business could not be carried on without that.

1019. How near ought they to be to one another?—As close as possible, for this reason; in order to supply my customers, I require not only the whole carcass of mutton but a great number of legs and saddles as well; and to obtain those I am driven into the dead-meat market.

1020. The distribution of carcasses into parts, is effected by the dead-meat market?—Yes. In my particular trade, I require particularly the prime meat of the animal; sometimes I cut 100 saddles into mutton chops.

1021. That is, in order to supply the eating-houses and chop-houses in your neighbourhood?—Yes.

1022. Does it appear to you that the demand in the dead-meat market increases more in proportion than the demand in the live-meat market?—I think not; from certain counties we have not so much dead meat as formerly; but from others there is a great increase.

1023. Looking to the demand of the butchers, do you think their disposition is to go rather to the dead-meat market than to Smithfield market?—No, I think they would rather go to Smithfield market if they had the opportunity, because they like to purchase beasts alive and kill them themselves; they look better to the eye. If a man goes to Smithfield, and gets two or three beasts, which he kills himself, he can slaughter when, and dress them, as he likes; and they look so much better when exposed for sale than beasts sent up dead from the country.

1024. If the butcher can buy dead meat in a good condition, is it not more convenient for him to buy joints or parts of the animal than the whole carcass?—It is a great convenience to do that, but he would not like to buy all his meat in that way.

1025. If he buys the live sheep, he necessarily buys the whole carcass?—Yes. In the summer time it is impossible to depend upon the dead-meat market, because of the difficulty of keeping it. It is sometimes tainted before it comes into the market.

1026. What does such meat sell for?—It sells very cheap. It is cut up and sold for dogs'-meat. It is used for various purposes.

1027. For what purposes?—As dogs'-meat.

1028. Is any used for sausages?—Yes; for German sausages, and things of that sort.

1029. You stated that you had a slaughter-house formerly, and that it is desirable for a butcher to have a slaughter-house: would it be desirable for a butcher to have a slaughter-house at a distance from his shop?—I find it very inconvenient to have my slaughter-house away from my shop, for this reason: when I wanted my men at home, they were at the slaughter-house, and we were liable to constant robbery. Washerwomen, and shoemakers, and others would bring things to the slaughter-house, instead of bringing them home. I have been a great sufferer from my slaughter-house being broken into, and I gave it up on that account.

1030. Would public abattoirs be a great convenience to you?—No; I am decidedly opposed to them.

1031. Why are you opposed to them?—When you have your slaughter-house under your control, for your own interest's sake you would see that humanity was exercised by those who slaughtered the animal; and cleanliness must of course be observed, because your family would be living near the slaughter-house; and there is this convenience, that the animal may be slaughtered at any hour of the day or night that you wish. If you had abattoirs, your horses and carts would be constantly at work.

1032. And that would increase the expense?—Yes.

1033. If you had public slaughter-houses, and the same control, that difficulty would be obviated?—I do not think that possible. The men are careless the moment your back is turned, and the offals and fat are thrown aside, even at home, and it is impossible that you could have the same control over an abattoir as you can have over your own slaughter-house.

1034. But of late years you have carried on business without having a slaughter-house?—Yes.

1035. So that a great portion of the meat you have sold has been slaughtered at a consider-

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able distance from your shop?—Yes; at Leadenhall market is the slaughter-house that I use, and Mr. Cramp, of Whitechapel, principally supplies me with the hind-quarters of beef that I want.

1036. What should you say to slaughter-houses being licensed?—I should have no objection to that, and to their being inspected.

1037. You think they ought to be licensed for a certain period, the licence being renewable every year?—Yes; I should have no objection to it if I had one.

1038. Should you see any objection to their being licensed by the magistrates, in the same way as public-houses are licensed?—I have hardly considered that; but I should have no objection to such an authority being exercised over slaughter-houses.

1039. Supposing a butcher sends cattle and sheep to a public slaughter-house, how does he know that he gets back the carcass of the animal that he sends?—He sends his servant to see the animal slaughtered, and I think a man must be a very inferior judge to buy a bullock alive and not know it when it was dead.

1040. Is it not notorious in trials for sheep stealing, that the animal is always identified not by the carcass but by the fleece?—Men are required to swear to it in cases of that kind, men do not like to take an oath unless they are quite certain about it. I have seen pieces of meat which I should not hesitate in swearing were the identical pieces of meat that I had seen before.

1041. Would it be possible to mark the feet of the animal?—Yes; they might be marked by the butcher with some mark of his own.

1042. The feet are not cut off?—Yes they are, unless you desire them to be saved.

1043. Are the heads cut off?—Yes; unless we wish to show what breed and age they are, and then they are left on for the purpose of display.

1044. But for the purpose of establishing the identity of the animal, you might keep the head or feet?—Yes, if you choose to do so, but it hardly requires that with a practical man.

1045. You are under no apprehension that there would be a difficulty in identifying the carcass in case of persons sending animals to a slaughter-house which is not their own private property?—No.

1046. You have said that Smithfield market requires enlarging to the extent of two acres, and Newgate market also; would there be an advantage or a disadvantage to the public if Smithfield and Newgate markets were removed to another locality?—I think it would be a disadvantage. I am a great advocate for Smithfield market remaining where it is, on account of its central position and all its purposes of business: all parties who attend Smithfield market have all the opportunities they could have of transacting their business; but if you took one market away, you would create a monopoly that all would regret to see.

1046. The same objection would not exist if you put both markets together?—No; but they must be near the centre, they must not be removed from the City, because of the expense of getting the meat backwards and forwards.

1048. You mean the expense to the trade?—Yes, if I had to go up to Wormwood Scrubbs or Kennington Common, with the quantity of meat that I have to get home in the morning to supply my customers each day, the inconvenience would be very great.

1049. The West End butchers would not experience that inconvenience?—It would depend where you placed the market.

1050. But you send meat to the West End, do you not?—Yes.

1051. Is Smithfield market the most central position for London generally?—Yes, and it is near the bridges, which is an important consideration.

1052. Supposing there were two markets established, one to the north of London and the other to the south, would not that answer the purpose?—There are now two markets established, the Islington and the Smithfield, but both markets merge into one.

1053. If they were on different days, might they not exist separately?—They would merge into one.

1054. But supposing one were in a central position to the north of the City, and the other in a central position to the south, and they were on different days, do you think they could not exist separately?—No; the butchers may be contending against their own interest, but they are much prejudiced in favour of one market, and that is in as central a position as it can be. If you were now laying the foundation of a new city in that spot, you could not put the market in a more central position than it now is; and the more central you have a market of that large magnitude to supply meat to this vast metropolis the better it is for the graziers and the producers, and the consumers. I have thought much on the subject, and I feel quite convinced of it.

1055. You have said that it would be inconvenient to you in sending your carts for the meat if the market were at a distance; would that very considerably increase the traffic of the City?—The traffic of butchers' carts it would materially increase, and you know what butchers' carts are, driven by butchers' men.

1056. At what rate do they go?—From eight miles to fourteen miles an hour.

1057. You say that the state of Newgate market is such that you and other eminent butchers are detained an hour and a half from the difficulty of loading the carts?—Not always; sometimes you are detained that time.

1058. If your carts and horses travel at the rate of eight, or say six, or even four miles an hour, would it not be a greater convenience to you to go two miles out of town, and two miles back, and would you not do it in less time than is now occupied?—Yes; but when I was giving you the pace at which the carts go, I was giving the pace in conveying joints of meat to customers, and not in bringing home a waggon-load of meat; where it is a large quantity you would require the cart to go numberless times.

1059. Why should there be more driving through the streets if a market were established

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somewhere near Pentonville Prison instead of in Smithfield?—It would so with many parties, particularly those from Surrey, and Sussex, and Kent, who have to go to that market.

1060. But would not the West End people have so much less travelling?—I think not; I do not see that anything would be gained by taking the market to Pentonville.

1061. Would it not be a grand advantage to have double the space?—I do not hold with having too large a market; if we have too large a space for the animals, they get driven about.

1062. You think it of no advantage to have good lairage?—Yes; I like good lairage after the animal is bought; and were I to give an opinion upon the matter, it would be that Smithfield has nuisances, but they are to be abated. I would not have a bullock driven out of Smithfield after nine in the morning, or half-past, or before four or five in the afternoon; and if I had bullocks there, I should be happy to pay 6d. a-head, in order to have hay and water given them.

1063. Can you get at that at Smithfield?—Yes; there are places in the market now, but they might be very much increased.

1064. What enlargement do you contemplate?—I think two acres might be sufficient, but you might make it five acres.

1065. Would five be better than two?—Yes, if you had those lairs.

1066. Are not cattle crowded together on full days?—Yes.

1067. Does that create considerable inconvenience?—No, not particularly; the animals would lie more comfortably if they had more space.

1068. On what day do the animals come principally from the country?—They come up on Saturday principally.

1069. When are they sold?—On the Monday morning.

1070. Do the cattle feed well after the journey by railway?—Some of the sheep appear to do so. I have been at the lairs when they come in, and the moment the hay and water is laid down, they go there to drink.

1071. Directly after they come in?—Yes.

1072. Do the cattle come in as good a state when they travel by railway as when driven along the road?—They are sometimes very much bruised in the railway carriages, particularly so on the Eastern Counties Line. I formed one of a deputation to the Directors, with a view to get them to have the carriages differently constructed.

1073. In some carriages they are loaded by the head, and in some by the truck, in which do they travel best?—I can only speak to the Eastern Counties Line; they were placed in the trucks, and it frequently occurred in wet weather when the bottom of the trucks was slippery, that one of those animals would slip down, and then it was trampled upon by the others; but since that time they have formed the bottom of the trucks of planks laid across each other, and the animals have a firmer footing.

1074. Do you pay by the head or the truck?—I am not aware.

1075. Does mutton or beef come up from the country in the best state?—Mutton, I think, comes up in a better state than beef.

1076. Is there any further observation that you would wish to make?—With respect to the abattoirs, I expected that it would be proposed to have a great number of those animals slaughtered in one particular locality, and there would therefore be a great congregation of butchers and slaughtermen and others, for the purpose of slaughtering those animals; because in the summer time, on Friday in particular, after Smithfield market, there are as many as from 12,000 to 15,000 sheep and lambs, and 1,200 beasts slaughtered for Sunday's consumption, and they must be slaughtered on Friday, and brought to our houses on Saturday, and distributed to the public on Saturday; and if it were in contemplation to have those erections, and such a vast body of slaughtermen, it would not be a very good school for us to send our sons or apprentices to to learn their business. I think if a young man is brought up to the business at home, it has a much better moral effect upon him than there would be if he were brought up at those abattoirs.

1077. What you have now stated of the nature of abattoirs is what you conceive would be the state of public abattoirs if they were established?—Yes; it would be such a school as I should not like to send any of my sons or my apprentices to.

1078. You have stated that a slaughter-house, to be of any convenience to you, should be near your shop?—Yes.

1079. In the remarks you have just made, you confine yourself to compulsory abattoirs?—Yes.

1080. If the abattoirs were not compulsory you would not entertain the same objection to them?—No, provided the butcher were allowed to retain his own slaughter-house.

1081 Which you would not object to have registered?—No.

[The Witness withdrew.]

Adjourned to Wednesday next, at 12 o'clock.

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Mr. T. Slater.

WEDNESDAY, 9th January, 1850.

GEORGE CORNEWALL LEWIS, Esq., M.P., in the Chair.

Mr. Thomas Slater examined.

1082. Are you engaged in trade as a butcher in London?—I am, at Kensington, also in Jermyn-street.

1083. How long have you been in trade?—Thirty-seven years.

1084. Are you well acquainted with the manner in which London is supplied with live and dead meat?—Yes. I suppose I am the largest retailer.

1085. Are you a carcass butcher as well as retailer?—I am exclusively a retail butcher.

1086. Are you in the habit of attending Smithfield market?—Yes.

1087. Both on Mondays and Fridays?—Not so much as I used to do. I buy a great deal of my stock now from feeders in Norfolk and Essex, and in other counties in England, whenever and wherever I know the best stock is to be procured. I have a large connexion with the most eminent graziers, and persons who feed and fat a great deal of stock.

1088. Have you convenient places to put them in at Kensington?—Yes; and I so arrange with the feeders that they send me the stock to suit the requirements of my trade. For instance, I take 20 oxen this week, and 20 the following week. I buy sometimes as many as 60 or 80 at a time, but I have every convenience at Kensington for the careful keeping of any stock I have on hand. I do not suppose any person in my trade has such extensive premises as I have.

1089. Are they consigned to you directly from the country, without passing through the hands of a salesman?—Yes, just so.

1090. And slaughtered by you upon your premises?—Yes.

1091. You have a slaughter-house?—Yes, most convenient. I have had members of parliament come to see it, who would hardly believe, from the good arrangement and cleanliness observed, that cattle were slaughtered there. Every department of the business is under my personal and daily inspection. It is as perfect a place altogether as can be.

1092. How many cattle do you slaughter in the course of a week?—On an average, 200 sheep and about 20 to 25 oxen.

1093. Is it used by any person except yourself?—Nobody.

1094. If those beasts were driven into the market, would they be so valuable to you?—No, they would not.

1095. With regard to Smithfield market, do you think it affords sufficient accommodation both to the buyer and the seller?—Of late there has been a great improvement made in the market. A great many oxen are tied up. I have not seen much inconvenience.

1096. Do you find that, practically, there is inconvenience to the butchers in attending the market?—I do not believe there is any great inconvenience in the market. I myself never saw an accident in the market beyond a person being kicked.

1097. Is there sufficient space for the proper examination of the animals?—I think so, in the general market; but when there is an excessive supply at market, there is sometimes inconvenience; such markets as the large Christmas markets.

1098. How many markets of that sort are there in the course of a year?—Only the Christmas markets. I have often wondered at seeing the market so well regulated, considering the quantity of cattle for sale.

1099. Do you consider the situation of Smithfield to be convenient for the trade?—I have always thought so.

1100. On what account is it convenient?—One convenience is its being near to Newgate market.

1101. Do you ever attend Newgate market?—Daily. I buy a great deal of beef and mutton, veal and pork in Newgate market.

1102. Do you buy as much meat in Newgate market as you buy in Smithfield?—Not so much. We kill the greater proportion of our meat at home than we require for our trade.

1103. Do you happen to know whether the quantity of meat sold in Newgate market has increased of late years?—Very much. I have been 38 years in business, but I have been in the habit of going to the market for 45 years, having gone when a youth with my father. When I first went there, to the best of my recollection, there were not more than 20 shops, but now there are 200.

1104. To what do you attribute that increase?—Demand and supply necessarily follow. The population of London being so greatly increased, and the facility of sending meat by the railways at a less cost when slaughtered, induces the country graziers and jobbers to send it to Newgate and Leadenhall markets for sale, hence the increase of shops.

1105. Has not the quantity of meat sold in Newgate market increased proportionably more than the quantity of live stock sold in Smithfield market?—Smithfield market has very much increased also. The markets are double what they used to be; but I should think Newgate market has increased more in proportion than Smithfield, because there used not to be more than 20 names, and now there are upwards of 200.

1106. Supposing the cattle-market now held in Smithfield were removed to some place on the northern side of the metropolis, would that be convenient or inconvenient to the butchers?—If they had one market I do not know that the butchers would be inconvenienced by it; but if they had markets in different places it would harass the butchers very much, because some counties send meat that suits the West End trade, and other counties send meat that is not of that quality to suit the trade of those supplying first-class customers.

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1107. Are you of opinion that there ought to be one great metropolitan market for live stock?—I am convinced it is the best.

1108. Would it be possible to arrange the market so that if it were held two days in the week the numbers sold on each day would be more equal than they are at present?—Perhaps if the days were altered it might be so. Monday is a very convenient day for the trade to buy; it is rather a slack day with a great many butchers, because people deal largely in meat on Saturday, and some of the butchers who have chance customers do little or no business on Monday, so that it gives them a leisure day to buy their meat.

1109. If the number sold on the two days of the week were more nearly equal than they are at present, would not less space be requisite for the market?—Certainly.

1110. Does not the present system of selling twice as many on Monday as on Friday render a greater space desirable?—I should think there are nine-tenths sold on Monday; there are very few cattle sold on the Friday. There are so few persons go to Friday's market, that people will not sell their best stock on the Friday: if you visited Friday's market, you could walk about quite easily. There is not one butcher in ten that goes to Friday's market.

1111. Would the markets be more equalized if they were held on Tuesdays and Fridays?—I think it would be so; I think the markets would be more equal.

1112. Is not Monday the great day for slaughtering?—It greatly depends upon the weather. Many persons at this season of the year, small capitalists in particular, are anxious to get their meat slaughtered, and to exhibit it as soon as they get home; but people who have larger means, have their stock settled. It would not suit me to take my meat from any place without giving it time to settle; I always require it to be a day or too to settle: the meat looks better, and it is better in every respect if it is settled.

1113. During the hot weather, do you prefer buying in any other market rather than in Smithfield?—I very much prefer buying my stock in the country. I do not know that I have been in Smithfield these three or four market days.

1114. Supposing the cattle and sheep-market were removed to the northern part of the town, would it be convenient that the dead-meat market should follow it, or that it should remain nearly in its present position?—I think the market being in the City would answer the purposes better, being central.

1115. Would the two markets be sufficiently near one another for the convenience of the butchers if the dead-meat market remained at Newgate market, and the live-meat market were removed to the northern part of the town?—I think so; I do not think that there would be much inconvenience in that. It is only on Monday that the butchers come from the country. After they have bought their stock in Smithfield they go to the dead-meat market, and I believe the salesmen make larger sales in consequence.

1116. Would not you think it objectionable that the live-meat market and the dead-meat market should be a mile asunder?—I do not see any particular objection to that.

1117. Do you think it would be a good thing to remove the live-meat market from Smithfield to some place on the north of London, perhaps a mile off from Newgate, supposing there were ample accommodation provided by a large space being obtained?—If sufficient accommodation could be afforded, I should say it would be better where it is, because butchers from far distances would go to market through the town, and have their stock brought through the town. Now at Smithfield the traffic is branched off in different directions, some goes one way and some goes another. I come home in my cart from Smithfield, and I am seldom inconvenienced by it.

1118. Do you think it desirable that the live-meat market should have space sufficient to afford lairage for the cattle?—For humanity's sake it would be better if it could be done, but that would require very great space.

1119. With regard to the value of the cattle themselves after they have been driven to the live-meat market, what do you consider would be the real value to the grazier or the proprietor of those cattle, of having lairage and water supply for the cattle upon their arrival, with ample space for their fair examination?—People sending their beasts up generally have some man of their own engaged to see, whether they are at Holloway or elsewhere, that they do get hay and water, and then the butcher, as soon as he has purchased them, takes them away. I myself am generally out of the market by eight or nine o'clock in the morning. My drover is in attendance, and my stock is taken away immediately.

1120. So that the damage, if any, arises to the butcher, and not to the grazier?—Yes; if there is damage, it is out of sight.

1121. Do you think there is much damage to the stock going to Smithfield?—I think there is less now than ever I recollect.

1122. Supposing a farmer were to say that he had bred a beast, and had it for two or three years in his own field, and after that it went out of his field, in four days he saw his beast again, it having been bought in Smithfield, and that he (being a very intelligent and careful farmer) did not know his beast again, would you say that that was an exaggerated statement?—I think in four days, cattle being away might be very much affected. It is detrimental to stock to take it even from one place to another. Sheep, if they have only gone from one part of the farm to another for a long distance, do not seem to recover it for a few days,—much more must it be so if beasts are brought from all the kindness they have received at home to a market.

1123. Should you think it an exaggerated statement if the grazier should say that he absolutely did not know his beast again in four days after it had left him?—I should think it exaggerated with respect to beasts, but sheep often get very much damaged and disfigured; sometimes they get trodden in the train.

1124. Do the live cattle that you slaughter in your trade generally come to you from

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Smithfield, or do they come from the farms from which you purchase them?—They generally come by the railways, but if the place from which they come is not too far, if it is anywhere within 15 miles, I prefer their being brought quietly up by the road.

1125. What proportion of the cattle and sheep that you kill at your slaughter-house come to you direct without being exposed at Smithfield?—Latterly, about two-thirds.

1126. For how many years has that been your average?—For the last four or five years two-thirds of my cattle have come from the feeders. It is of very little consequence to me whether the market is removed or not.

1127. Do you think that there are many butchers besides yourself who deal directly with the grazier?—More now than ever.

1128. Is the practice increasing of butchers coming into direct relation with the country graziers?—Very much; the butcher can go down to the country in a short space of time.

1129. In that case you have no intervention of salesmen: you deal directly with the owner of the cattle?—Yes; and if the gentleman is not a perfect judge, he may have a salesman to meet the butcher, or if he does not, he would have some person to view the stock before the butcher comes.

1130. Do you find that your cattle suffer by travelling by railway?—Not if they have proper space given to them.

1131. Supposing that they have ample space, and that they are brought up with the utmost care, do they feed well the day after they have travelled?—I never noticed that particularly, but I recommend to tie oxen up in the railway carriages, to prevent them from goring each other.

1132. Are they not so alarmed by the railway journey, that they refuse to feed for a certain time?—I have not perceived that, and I have never heard it complained of.

1133. You do not think that that is an argument for changing the market from Monday to Tuesday?—I think it could not be a sufficient reason. Directly my beasts come up the Birmingham line, they are brought home by my own man.

1134. Do they feed directly?—Yes. Perhaps they are slightly affected.

1135. What is the best system of payment for the railway conveyance of cattle and stock. Do you think that the best system is that they should be paid for by the truck, or paid for by the head?—I should say they should be paid by the head; there would be less stock damaged. Persons are very apt, in order to make a saving, to put in too many. A person wished the other day to make a saving from Ashford, and he had two or three sheep seriously injured by putting too many into a truck. I said it was being "penny wise and pound foolish."

1136. Supposing there were a space of 100 acres which could be devoted to the purpose of providing a market and lairage, and all the conveniences necessary for the keeping and the sale of cattle, do you think that would be a great improvement upon the present state of things?—Nobody could quarrel with having plenty of room to do business. But if the beasts are tied up, and if there is sufficient room to answer the purpose, that is all that is wanted. You may have accidents by going into a corner. Sometimes they drive twenty oxen into a corner, and the beasts are frisky.

1137. You do not want too much room?—No; I think it is a great thing to have the beasts tied up.

1138. According to the present amount of supply of live meat in the metropolis, do you think that 40 or 50 acres would be as good as 100?—If the beasts could have accommodation for having a little hay and water, it must be beneficial to the cattle.

1139. How much space would afford all the accommodation which appears to you to be necessary for lairage as well as for standing room?—The lairage would take more than the standing considerably. Forty or fifty acres would be very desirable, because then persons after they had purchased their beasts could have them out directly.

1140. What would be your opinion of having an inspection of slaughter-houses in the metropolis by some public authority?—I think that would be desirable.

1141. By whom would you have the Inspector appointed?—The parish authorities, whatever they might be.

1142. What power would you give to the Inspector?—I think that a person should be fined for having anything disagreeable or offensive on his premises.

1143. Are you aware of the system which has been established in the City with reference to the inspection of slaughter-houses?—No; I am not aware of that.

1144. Would it be right that the Inspector, or the magistrates, upon the application of the Inspector, should have the power of closing any slaughter-house which was not kept in a proper state?—After being fined a certain number of times, if he still persisted, he would deserve punishment. But he should have sufficient notice.

1145. Are you aware that by the City Sewers Act, no new slaughter-house can be opened within the boundary of the City?—I have heard that.

1146. Does that appear to you to be a wise regulation?—Considering the smallness of the space, perhaps it is.

1147. Would it be beneficial to have a similar regulation for the entire metropolis?—I can hardly answer that.

1148. Would not such a regulation practically give a monopoly to the existing slaughter-houses?—I think if you lay down plans for persons, things will not be so well carried out, as people will carry on their own pursuits.

1149. Are you of opinion that every butcher should have his own slaughter-house?—If he has opportunity to have one behind his premises, and there is sufficient space to have it, I think it is desirable.

1150. Are you sufficiently acquainted with the trade to state what proportion of the retail

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butchers have a private slaughter-house of their own?—I should think nine out of ten have the convenience of slaughtering.

1151. Both cattle and sheep, or sheep only?—Sheep, principally.

1152. How many retail butchers do you suppose have slaughter-houses in which they slaughter cattle?—I do not know how many butchers there are in London, but I think nine-tenths of them have.

1153. Are you aware how many public slaughter-houses there are in the metropolis exclusive of the city of London?—I should think there are not many public slaughter-houses beyond Newgate market. There may be some perhaps over the water, in Lambeth, and those parts. There are some at Newgate market, and, I think, at St. James's and at Clare market; but I do not think there are many public slaughter-houses.

1154. Have you ever had to avail yourself of a public slaughter-house in your trade?—Only for the slaughter of oxen lame, which I would not have driven home, but sent them to a public slaughter-house.

1155. Supposing that Smithfield market were removed to an ample space somewhere in the neighbourhood of Islington, what should you say to the establishment of public slaughter-houses in immediate connexion with the live-cattle market; at the same time leaving to butchers having licensed slaughter-houses the power of slaughtering their own cattle?—I think if slaughter-houses were built for the accommodation of butchers, many persons would avail themselves of them; I see no objection to that. In fact, I think it is very useful to have a slaughter-house near to a large market, because some stock comes very lame, and it is desirable to have it slaughtered as near as possible. For myself, I have observed sheep that have come from Kensington to Jermyn-street, and on being brought from the slaughter-house they looked very much disfigured. I have said to my sons, "How these sheep look tumbled." The sheep that I had slaughtered at my own house and brought immediately into the shop look much better.

1156. Although they may not look so well, are they at all damaged?—Not in the least, as to the eating part. The meat would not keep quite so well in very hot weather, so that there would be a loss. By having it disfigured, it sells for a little less. I have a little slaughter-house near my town shop, and here we lost considerably in the quantity of fat, in consequence of the men being at work away from their master. Persons are too glad to come round while it is going on; and one would pump, and another would do something else, and none of them would go away without pilfering.

1157. So that the butcher would prefer that his slaughtering-place should be near his place of sale?—For myself, if I had to go to a licensed place to slaughter, I should prefer buying dead meat. The slaughtering-house furnishes employment for our men in the afternoon. One of my men calls upon 25 to 50 customers, and in the afternoon we have no other employment for those people. If we had licensed slaughter-houses, they would be doing our business, and our own men would be hanging about in the afternoon.

1158. With respect to the condition of the cattle which have been mentioned whose appearance was so much altered within four days after they left the farm, is there any great alteration in the appearance of a beast between the time when it comes to Holloway and the time when you purchase it in Smithfield. Suppose it got to Holloway last night, and it is sold this morning in Smithfield, is there any great difference in its appearance?—I should not think there is any very great difference in that short time, but any animal that is away four days must be suffering. If it is a horse that is off his feed, he does not look so well, and a beast would be a little off his feed.

1159. But that damage would arise wherever the market was?—I think, anywhere.

1160. Are you of opinion that Smithfield is the most convenient site for a market?—I have always thought it very convenient.

1161. There is no particular inconvenience, except on certain days?—On certain days there is not sufficient space.

1162. Supposing it were enlarged so as to admit of 1,000 more cattle, would it then afford every convenience?—I think if it were enlarged it would certainly be very beneficial. There is a very narrow street leading to Holborn. Giltspur-street is a wide open street, but along the narrow streets they get away with great difficulty. If that street to Holborn were made as wide as Giltspur-street, they would get away more easily.

1163. But as a matter of fact, for the last four years you have carried on two-thirds of your business without any aid from Smithfield whatever?—I think so.

1164. So that you being an eminent member of your trade, as far as your business is concerned, the inconveniences of which the public complain, apply only to one-third of your trade?—Yes.

1165. Your opinion is, that Smithfield market would be much better for an increased space, but is it of great importance that there should be ample lairage near the market?—The time of getting in beasts averages from 12 o'clock or 1 o'clock at night. The beast has to go for many hours without food and water. It would be very desirable if the beasts could have a pailful of water and a little hay. But, on second thought, I do not know that it is of so great consequence, because I like fasting my beasts and sheep before they are slaughtered. If you were to kill an ox very full of food, it would hardly be good the next day.

1166. So that if a bullock were bought at Smithfield this morning, and you wanted to slaughter it this evening, you would prefer that it should not have had anything to eat?—I should.

1167. Supposing the beasts are not sold, what is done with them then?—In that case, I think they would suffer more from not having their regular food; they would be worse for the next market.

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1168. If a market, with an ample extent of lairage were provided, might not the beasts and the sheep remain there for the next market?—Every salesman, almost, has a little place out of town for that purpose.

1169. Would not it be much better than that "little place" should be close to the market?—The less distance they have to go the better; but it is not of any great consequence, if it is within three or four miles.

1170. From which cause do you think that the fat cattle that come to Smithfield suffer most; from the want of rest or the want of food?—Generally speaking, in sending cattle by railway they do not require rest.

1171. Do they suffer more in your opinion from being kept standing, or driven about, or from being kept without food and water?—They suffer most from being driven about, I should think.

1172. You have stated that the cattle do suffer occasionally a good deal from the journey by railway, and being driven to Smithfield market, and being sold and driven home. Do you think they suffer equally when they are driven to Southall market and sold there?—The further they had to go, the more the beasts would suffer from the journey.

1173. Do you think they suffer as much when they are sold at Southall as when they are sold at Smithfield?—Yes, I think they do.

1174. Do you attend Southall market?—Not often. It is a very small market. The principal part of my business is done in Smithfield.

1175. What is the distance of Southall from London?—About nine miles.

1176. Do you think that, to have a market essentially useful to the metropolis, it should be nearer than that?—I should say, the nearer the better. I think it would not be well if the market were nine miles off, because many cattle coming by railway would have to go that distance further.

1177. Is there any other observation that you wish to make to the Commissioners?—As regards Newgate market, if some of the houses were taken down so as to give a fourth more space, and the approaches to the market widened, it would be very desirable, and, I believe, would answer every purpose. The shops are fitted up very conveniently for business; but we want a little more space to get our carts out of the way in Newgate-street.

1178. How much more space?—If there could be half as much again it would be better.

1179. You said that you did not think that there would be any material inconvenience in the removal of the live-stock market to some distance from the dead-meat market; do you think that there would be the same convenience to the trade and advantage to the public if Newgate market were to remain in something like the position in which it is now, and Smithfield market were removed?—I think so. It is more convenient to the butchers if it is near; but I do not think a mile would make any great difference. I think the butchers are exceedingly well suited at present if they could get more room. I do not think the butchers, generally speaking, want an alteration. I think they are generally well satisfied. I have been myself more than 40 years going to market, and I never saw an accident. The butchers themselves would take care that the drovers did not ill use the cattle. If the cattle are ill used, it is in the night. The alteration which has been made in the market is a great accommodation—to have the beasts tied up. There must be a little cruelty to get the beasts to stand with their heads together; but if they could be all tied up, it would be very desirable indeed, and prevent the beasts from being obliged to be driven and formed into circles for sale. I think, if the markets were enlarged and the approaches widened, every end would be answered. If the markets were wide apart from each other, I believe the public would be much inconvenienced; and it is my firm opinion that the markets had best be in a central position with respect to the metropolis.

[The Witness withdrew.]

Mr. J. Cramp.

Mr. John Cramp, examined.

1180. Are you a butcher?—I am.

1181. How long have you been in trade?—Between 30 and 40 years.

1182. Where do you reside?—At Whitechapel.

1183. Have you resided at Whitechapel ever since you have been in trade?—Always. I was born there.

1184. What is your business; is it exclusively that of a retail butcher?—Wholesale and retail, and supplying, under contracts, Union-houses, workhouses, and hospitals; it is a very general business both for beef, mutton, veal, pork, and lamb.

1185. Are you in the habit of dealing both at Smithfield and Newgate market?—I purchase at Smithfield, and send some parts to Newgate market for sale.

1186. Do you buy anything at Newgate market?—Very seldom.

1187. Is the whole of the meat that you sell bought alive by yourself?—The cattle I buy generally myself. I have a person with me, a foreman, who at times buys sheep.

1188. Is the whole of your stock purchased at Smithfield?—I occasionally purchase at other places, but not to any great extent; I sometimes purchase at Southall market and Romford market, and sometimes at Ashford, in Kent.

1189. Are the chief part of your purchases made in Smithfield market?—More than nine-tenths.

1190. Are you in the habit of regularly attending Smithfield?—With very few exceptions, I believe I have attended more than 100 market days out of the 104 in the last 30 years.

1191. Do you attend both Monday and Friday?—I do.

1192. Do you find there is sufficient accommodation at Smithfield for your purposes?—January 9, 1860.
Certainly not.

1193. In what respect is the accommodation insufficient?—Want of space.

Mr. J. Cramp.

1194. In what way does the want of space show itself?—I will endeavour to explain that; the cattle are not allowed to go into the market before 12 o'clock on Sunday night. Many of them are driven a considerable distance, as much as six or seven miles, in order to be at the opening of the market, and to secure room. The cattle are then taken charge of by the salesmen's drovers. About 2,000 can be accommodated with room to be tied; others stand untied, and they are formed into what is termed by the drovers "off-droves," but more generally known by the name of "ring-droves." Very great cruelty is necessarily obliged to be used in order to form these ring or off-droves. The plan is this: men walk behind them, some at the side, and others stand in front of the place where they intend to place them, and by beating them with great violence over the head and nose, the beasts are formed into this unnatural position. The number of ring or off-droves from September to Christmas, or the 1st of January, is very considerable. I should say that great part of the cruelty is unavoidable from want of space. The animals are forced into this unnatural position, and the butcher has not a fair opportunity of examining them. After we have completed our purchases we send our drovers for them, and they are obliged to be beaten violently upon the head to get them to fall back. The animals being beaten with such violence, run into other off-droves, and this process of cruelty cannot be avoided in so small a space.

1195. Is not the principal cruelty practised during the night before the butchers attend the market?—The market is formed before the butchers generally arrive; but I have upon more than one occasion been there the whole night to see the whole process, and it is as I have described.

1196. You have witnessed the process of driving the oxen to the places which they are to occupy during the day?—I have.

1197. Is not the principal cruelty inflicted upon the oxen during that process, and not after the butchers usually attend the market?—Both before and after; both in getting them in and in getting them away; and to keep them in that unnatural position a degree of cruelty or coercion must be exercised.

1198. What do you mean by "an unnatural position"?—All the heads running together.

1199. Do you mean a position which the animals are very unwilling to be driven into?—Exceedingly unwilling.

1200. Does not it require considerable compulsion to make them retain that position?—Yes, I have so stated.

1201. When a number of animals are purchased and taken out, are others driven in to supply their places?—If there are more than the market can accommodate. On the 17th of December last, the cattle were standing in droves in Giltspur-street and on Snow-hill.

1202. That was on one day in the year. But what is the average inconvenience on the hundred market days in the year?—It is not possible to state what it is, for the number of animals sent to market varies so much.

1203. What is about the average number that come?—It varies very much. Within the last few years it has been on the increase.

1204. You said that the inconvenience arises from want of space?—There is only sufficient accommodation, I consider, for between 2,000 and 3,000; consequently, if there are 4,000 or 5,000 sent to market it is over-crowded, and the inconvenience and cruelty is much greater.

1205. Did you ever see 4,000 or 5,000 except in the Christmas week?—Yes; the Smithfield returns will show the numbers.

1206. Suppose there was additional space for a thousand more, would that be sufficient?—No. It would make the market certainly more eligible for persons who have to do business there; but I consider the situation, and have always done so, a very improper one for a market.

1207. You have described the course pursued in placing the oxen in the market, will you now describe what is done with the sheep?—The sheep are driven down narrow alleys as they are termed—small avenues to the sheep-pens, which run many pens deep, and great force is necessary to place them in that position. Mr. Slater stated to me to-day, that the reason he buys so largely in the country is, that he could not get sheep from Smithfield that would furnish him with mutton to please his customers; that the saddles of mutton or the haunches of mutton are so frequently bruised and goaded. At the end of their sticks they have a goad, which penetrates through the skin and the flesh, and it causes pain, and injury to the meat.

1208. Is the quality of the meat injured by the treatment which the animals receive in Smithfield market?—I consider so.

1209. There is a deterioration in their value?—It is an injury to the grazier or owner; it is a loss to the butcher and a loss to the public.

1210. Would it be a considerable advantage to the persons engaged in the meat trade of the metropolis if there was a larger space for the sale of the live stock?—I have always been of that opinion.

1211. Do you see any disadvantages in the establishment of a market for live stock somewhere in the northern suburbs of the metropolis?—Not any; but a very great advantage.

1212. Would it be a disadvantage that the market for live stock should be at some distance from the dead-meat market?—The disadvantage would only be the small difference of expense to the parties who have to attend both; but it would be very easy for the butcher to send his foreman to Newgate market, and to go himself to the live-stock market.

1213. Is the time of a butcher generally fully occupied during the day? Taking an ordinary retail butcher, is his time fully occupied during the day after he has made his purchases

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in the morning?—A retail butcher, after he has supplied his customers for the day, which is generally done by two o'clock, has very little to do either himself or his men, unless he slaughters on his own premises. After the men have cleared the shop and have had their dinner, the practice is to go into the slaughter-house and to slaughter whatever is required.

1214. Would it make much difference to the butcher if he had to go a certain distance, say a mile or two miles from the live meat to the dead-meat market?—The only difference would be the trifling expense of the hire of a cab if he had not his own conveyance.

1215. Has not the butcher in general a conveyance of his own?—I should think seven-tenths of them have.

1216. Would it not be far preferable to have the live and the dead-meat markets contiguous to one another?—If the live-stock market were placed two or three miles from the present market, I do not think you could with advantage to the public have the dead-meat market there.

1217. Do you see any advantage in removing the dead-meat market from the neighbourhood of Newgate market?—If you will allow me, I will state what it has always struck me ought to be. In the first place, the cattle-market should be removed from Smithfield to some place northward in the immediate vicinity of the termini of the various railways,—the Great Western, the North Western, the London and York, and the Eastern Counties; and there would be another advantage in that situation: the cattle that come from Scotland and Holland and other parts, which are principally landed at Blackwall, might be brought by the railway, which is now near completion, from the East and West India Docks to the market without coming through the streets of London. In addition to that, wherever the cattle-market was removed to, I would recommend that no cattle be permitted to leave the market between such an hour and such an hour, taking care that they should leave the market in sufficient time to go to the various railways, because we must provide for the south as well as the north. There are a great number of Brighton butchers and butchers from other parts come to London and make their purchases, and the luggage trains do not leave till night; and after the traffic through the streets of London has subsided in a measure, they might go to the different railway termini, by which great public advantage, I think, would be effected.

1218. If such a market were established as you have mentioned, would it not be very desirable to have ample lairage for the cattle in the immediate neighbourhood of the market?—The market should comprehend a large area, which should be encompassed by a wall.

1219. How much space?—I should say 30 acres, where there should be lairage for the cattle, with a plentiful supply of water. A number of butchers would prefer leaving their cattle there after their purchases to driving them through the streets of London in the day-time.

1220. Would the public be better served upon that system, and would the meat be cheaper?—I do not think that it would at all affect the price of meat; the meat would be more perfect in condition.

1221. Less meat would be injured?—It would.

1222. Supposing the site of the live-stock market were changed, do you think that the price of meat sold by the retailer would be increased to the public?—No, the difference of expense would be so trifling. I myself pay 3d. per head for the driving my cattle to my own premises. If it was a greater distance, I might pay a penny a-head more. The only additional expense would be that and the sixpence or one shilling more for cab-hire to and from the market, but the advantage would be very great, because we should have, as butchers, the cattle in a much more perfect state.

1223. Are you aware of the present state of the law with respect to the slaughtering-houses in the City?—No, I am not; I do not reside in the City; Aldgate is in the City, and only three houses in the parish of Whitechapel.

1224. Should you object to an inspection of slaughter-houses by some public authority?—Certainly not; I should have taken occasion to mention that.

1225. What plan would you recommend with regard to the inspection of slaughter-houses?—That the inspector of police be permitted to walk in at any time during the hours of business, and to see that things were properly conducted.

1226. Would you give any power of regulating or of closing a slaughter-house that was improperly conducted?—If the alterations that were recommended were not attended to.

1227. Would you prohibit under-ground slaughter-houses?—Certainly.

1228. You would require all slaughtering to take place above ground?—Yes.

1229. Do you see any objection to the prohibition of driving cattle and sheep through the streets after a certain hour in the morning?—That is what I recommend. I have before stated that they should not leave the market, I would say, after eight o'clock in the morning in the summer, or between eight and four in the afternoon; and in the winter between nine and four; the cattle are generally driven into the market before the market takes place: I should say that cattle should not be driven through the town between certain hours.

1230. You have recommended a space of 30 acres for market and for lairage; would you attach public slaughter-houses to the market?—There must be, of necessity, a slaughter-house or slaughter-houses attached to the market to provide against accidents.

1231. But it should be optional with persons to slaughter there?—Yes.

1232. Were you examined before the recent Committee of the House of Commons in 1849?—Not in 1849, in 1847; and, I think, in 1828, 1834, and 1835.

1233. You were understood to say that you were always of opinion that Smithfield market was inconvenient?—Always; but I make this distinction: for the trade generally Smithfield is a very convenient site, but for the public it is very inconvenient.

1234. Are there any other observations you would wish to make to the Commissioners?—

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The business of Smithfield market, from the great increase of cattle sent there for sale, has become exceedingly inconvenient, and so has the business of Newgate market, for it is now so increased that Newgate market has now stretched itself to the various streets and lanes even into Newgate-street, where hampers of meat are pitched upon the public thoroughfares, and the meat placed upon them for sale, to the great annoyance of the public. Now, in the event of the cattle market being removed from Smithfield, if the business of Newgate market were removed there, where there is ample space, I think the residents there would be fairly compensated, and the only parties that might require compensation, or that would be entitled to it, would be those who have leases of premises in Newgate market.

1235. Would that arrangement, in your opinion, be most satisfactory to the trade, and to the various interests concerned?—I think not to the trade, but to the public.

1236. Looking at the interests of the public, would that be the best arrangement which you are able to suggest?—I think so. I have before stated that I think it would be an advantage to the grazier or owner of stock. It would be a benefit to the public and also to the butcher.

1237. If the market were removed from Smithfield two miles to the north or to the north-west, would any class of butchers be driven from it, say the class of small butchers, who would not be able to go so far?—I believe they would go there, for they go, at the present time, to Romford and other places, and to Southall, which is 12 miles.

1238. You think no inconvenience would arise from the removal of the market from Smithfield to a situation one or two miles distant?—There would be very little difference.

1239. You gave evidence in 1847, that the neighbourhood of King's Cross would be an eligible situation for a market?—I did; that is the evidence I now give, but I am not aware of any plot of ground that could be obtained there.

1240. Considering the situation of Smithfield, and the approaches to it, what effect, in your opinion, has the driving of the cattle and sheep during the nights previous to the market days through the approaches to Smithfield upon the cattle and sheep?—I cannot give an opinion upon what effect it may have. The approaches are narrow in every direction.

1241. You stated that the want of space in Smithfield necessitates such usage of the cattle as deteriorates them?—It does.

1242. Supposing that according to your recommendation, cattle were prohibited from being driven through Smithfield during the day-time within the hours which you have specified, would not that increase the damage to them—the space remaining as it now is?—Certainly.

1243. Then the carrying out of the recommendation would, in your opinion, necessitate an increase of the present space of Smithfield?—It would.

1244. In your opinion, would a mere increase of space in Smithfield remedy the evils which you ascribe to it in reference to its occasioning a deterioration in the appearance and the flesh of the cattle?—An increase of space sufficient for the present supply, and for what is likely to be sent to the market, must be very large, and of course the expense would be very great.

1245. Supposing the space to be enlarged, still, in your opinion, how far would the driving of the cattle through the streets to a spot in the situation of Smithfield affect the value of the cattle and sheep?—I cannot give an opinion.

1246. Supposing a grazier had 10 sheep at Southall, and you offered a certain sum for them, and the grazier insisted afterwards upon driving them into Smithfield, would you still give the same sum for the sheep after they had been so driven to Smithfield?—That would depend upon the state of the market. If they were returned unsold, and if there was a very great difference in their appearance, the probability is, that they would never sell for so much.

1247. Would not that be equally the case if they were driven to any other market?—No; because if there was a new market of proper size they would be driven into a large space, and remain there and be supplied with food and water.

1248. Have you ever thought whether it would be desirable to have two markets attached to London?—I think there should be a market on the south of the River Thames.

1249. Should that be of equal size with the one on the north?—It would not require to be more than one-fourth the size.

1250. Would it be sufficient if sheep and calves were sold there?—Cattle, sheep, and calves must be all sold at the same place. There are very few butchers that do not purchase all.

1251. You are aware that there is a horse-market at Smithfield?—Yes.

1252. Supposing that the cattle and sheep-market were removed, would it be desirable to retain the horse-market?—I think not. I think that the further that is away from London the better. The characters who attend are many of them very far from respectable.

1253. Is it not an inferior class of horses which are sold there?—Yes; but I have not been in Smithfield on a Friday afternoon but once these 10 or 12 years.

1254. Do you apprehend that the horse-market might be removed without inconvenience?—Without inconvenience, and, I think, great benefit to the public.

1255. Have you ever thought of any place for the site of a market on the south of London?—I have not. There is a market on Thursday at Croydon.

1556. Is there much stale and diseased and bad meat sold in Whitechapel market?—Yes, and in all other markets.

1257. Since they have had an inspection in Newgate market, is the principal quantity of diseased meat now sold out of the City jurisdiction?—The City, since the late inquiry, have appointed an Inspector for what is generally known as Whitechapel market. His business is to walk from one end of the market to the other. He has not power to go into the back premises, where the diseased meat is usually deposited. I saw the carcass of a cow sold by Messrs. Scales, some 18 months ago, for 7*s.* 6*d.*; it was so bad that it was not fit to be ex-

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posed, and he sold it to a man who said that he was going to take it to the horse-boiler's; but I expressed my doubt at the time, whether it was not for the purpose of making polonies, a description of sausage. This meat is not usually exposed to view; it is put in the slaughter-houses, cut in pieces, and placed in cloths or hampers, and not exposed to the public; and for this reason I think it absolutely necessary that the police or other competent persons should have the right of entering any part of the business premises of a butcher.

1258. Does it appear to you that it is part of the duty of the public authorities to seize diseased meat. Is not the public competent to protect itself as it does in other matters?—The public cannot protect themselves when diseased meat is chopped and put into a skin highly flavoured.

1259. Would any quantity of diseased meat find buyers?—I believe, any quantity.

1260. Do any means occur to you of preventing the sale of diseased meat in London?—By appointing Inspectors.

1261. How could the Inspector discover it?—It is easily discovered where it is unwholesome.

1262. Would you recommend that the Monday market should be changed to Tuesday?—I think that would be desirable.

1263. For what reason?—It would lessen the business on Sunday; and it would equalize the supplies sent to London; and in that case, perhaps, so large a space as 30 acres might not be necessary.

1264. Would it enable the graziers to send cattle up more according to the weather?—The weather has very little to do with sending cattle to London.

1265. Has not the weather much to do with the sale of cattle in London?—It has some little to do with it, but not much.

1266. Has not the weather a good deal to do with the sale of cattle at the Christmas market?—No, the supply and the demand are the two principal things.

1267. Is not it the case that the butchers refuse to buy large beasts in hot weather, but are willing to buy in frost?—If the weather is mild, there is an objection to buying large fat cattle.

1268. Is it not the case, that having the market on a Tuesday instead of on a Monday, would enable the grazier to send his beasts according to the weather?—I do not see that he cannot do that now.

1269. Is it not the case that the beast now remains in London 24 hours longer than it would do if the market were held on Tuesday?—If the market day were changed from Monday to Tuesday, instead of the cattle being sent by railway as they are now on Saturday, they would be sent on Monday.

1270. How long is your cart detained at Newgate market from the crowded state of the market and the bad accesses to it?—I do not send to Newgate market, and that is one great objection I have. I send to Dean and Hatton in Newgate-street, at the corner of Rose-street, where there is little difficulty in getting away after the cart is loaded; but I am aware that there is a great deal of time lost when the carts are inside the market.

1271. Do you believe that a great deal of bad meat is sold in the cellars in Newgate market?—I am not able to answer that question.

1272. You said that the Inspector could not go into the slaughter-houses in Whitechapel; do you know why he cannot?—Because he has not the power. I understand that the Lord Mayor refuses to give him the power.

1273. Is that in the Lord Mayor's jurisdiction?—Yes.

1274. Not only the shops, but also the slaughter-houses?—Yes, the shops and slaughter-houses adjoin.

[The Witness withdrew.]

Mr. J. Hayward.

Mr. Joseph Hayward, examined.

1275. Are you in the employment of Messrs. Pickford?—Yes, I am.

1276. Can you inform the Commissioners of the manner in which dead meat is conveyed by railway to London?—It is collected at the different market towns from which they send it, and it comes to the Camden Town Station, and from thence we deliver it chiefly to Newgate market, and some to Leadenhall market.

1277. Do Messrs. Pickford convey the meat by railway?—The railway company bring it up to the station, and we, as their agents, bring it up to the markets.

1278. Does it not come at all times of the year?—It comes at all times of the year, more or less; but of course a greater quantity comes in cold weather than in warm weather.

1279. How do you deliver it?—We take the hampers in which the meat is sent from Camden Town Station to the market, and transfer them to the different salesmen there.

1280. Do you know whether there is a great difficulty in delivering the meat at Newgate market?—There is great difficulty arising from the very limited space, and the great confusion particularly if the trains are late, and we are late in the market.

1281. Are there any complaints with reference to the want of space in Newgate market?—Very great complaints. We complain very much, as far as the working part of our business goes. Many of those hampers, particularly from the northern parts, are many hundreds weight.

1282. Is the expense increased in consequence of the want of space in the market?—Yes, it is.

1283. In what way?—It is increased in consequence of our being obliged to employ more men to do the work.

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1284. Can you always bring the carts into the market, or is it sometimes necessary to discharge the hampers at a distance from the market?—When we are late we are obliged to discharge them at a distance from the market. If the trains are in good time we get up to the street and discharge the hampers there; but frequently we cannot get into what we call the interior of the market, and that obliges us to truck the hampers into the market.

1285. Does it happen frequently that there is a press and crowding in the neighbourhood of the market in consequence of the number of carts there?—Very frequently. Sometimes we have been there with a dozen carts ourselves, and other carriers have had more; and there are buyers there as well, with all their carts, and the press has been very great. We have been sometimes summoned before the magistrates for our carts being in the way, but it was unavoidable. We could not get the carts either in or out.

1286. Supposing the avenues of Newgate market were enlarged to the extent of one-half, would that remedy the inconvenience?—I do not know; but what we want is space in which to drive up our conveyances, and get away again easily. I may observe, that only last Monday we conveyed 60 tons of meat into Newgate market.

1287. Does the quantity of meat delivered in Newgate market increase?—It has increased twenty-fold since the opening of the railways, as far as Messrs. Pickford are concerned.

1288. Can you give an account of the quantity of meat you deliver in the course of the year, in Newgate market?—I have not taken it out for the year; but I took it out for four months; the quantity we delivered in those four months was 1825 tons.

1289. Which four months are those?—September, October, November, and December last.

1290. Which railways do you include?—None but the North Western; and Messrs. Pickford are only one of the parties who convey meat; Chaplin and Horne, perhaps, deliver more than we do. In those four months, the weight per day would be 18 tons 15 cwt., provided we delivered the same quantity every day, but the meat comes principally on two days of the week, Saturday and Monday; and on Tuesday we have hardly any.

1291. Do you deliver meat at any other market besides Newgate market?—Yes, at Leadenhall.

1292. Is the space at Leadenhall market insufficient?—Yes; it is insufficient.

1293. Which are the principal places which send up meat?—Leicester, Loughborough, Rugby, Northampton, and Coventry; and in the winter season it comes from a greater distance. We have a good deal from Leeds, Newcastle, and Edinburgh, and even as far as Perth.

1294. Do you get much from Edinburgh?—Yes, a good deal at this season of the year.

1295. Have you any complaints of packages that are sent being spoiled?—Yes; in warm muggy weather, particularly. If the trains are late, and lose that day's market.

1296. Is it owing to their detention in the market?—No, I cannot say that it is owing to that. If the train were late and the market were full, I dare say the packages when they arrived would be put on one side as not being in time for that day's market.

1297. You have given the quantity you brought in four months. Would that be the average for the year?—It would fall off in the summer months.

1298. The next four months would be about the same?—Yes.

1299. Can you suggest any means of obtaining an account of the total quantity of meat delivered at Newgate market from the country?—No, it comes from various places; but the greatest quantities come by railway; and the coasting steamers bring a great deal.

1300. You said that frequent complaints were made of the damage done to the meat. Does that damage arise from your being unable to deliver the meat at Newgate market, or from other causes?—I cannot say that it is from the delays at Newgate market, because, directly it is brought it is delivered.

1301. It may arise from delays in the journey?—Yes.

[The Witness withdrew.]

Mr. Charles William Willoughby, examined.

Mr. C. W. Willoughby.

1302. Are you agent of the Aberdeen Steam Packet Company?—I am.

1303. Is much live stock brought up from Scotland to London?—At certain times of the year a large quantity is brought up.

1304. At what times of the year?—From December to June is the principal time.

1305. Has the quantity brought up been increasing or diminishing of late years?—A considerable increase.

1306. Are the cattle sent up by graziers in Scotland?—Yes, and farmers; and they are consigned to the salesmen in Smithfield.

1307. Do the cattle suffer much during the voyage?—No; for instance, one steamer, "The City of London," has brought nearly 20,000 head of cattle since she was built in July, 1844, and we have had only two deaths.

1308. Can you tell the Commissioners how much live stock you bring up in the course of the year?—I should say we carry 170 head of cattle in one vessel, and 150 in the other.

1309. What is the total number brought up in the course of the year?—7801 from Aberdeen in 1849.

1310. What do you do with them when they arrive in London?—They wait from the

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steamer on the wharf, from whence they are taken to the lairs. The drovers apply for them, and they are delivered to them for salesmen.

1311. What are the days of their arrival?—Generally on Monday. They leave on Saturday.

1312. Do the steamers stop at any place between Aberdeen and London?—No; they bring the cattle direct.

1313. Are all the cattle that you bring by steamer brought from Aberdeen?—We have brought some cattle from Inverness in the summer months.

1314. Do you bring any sheep from Scotland?—Very few.

1315. Do you bring dead meat?—Yes.

1316. Both beef and mutton?—Very little mutton. Mutton comes from Edinburgh.

1317. Do you bring any considerable quantity of dead meat?—On the average, we bring 20 tons by steamer while the cold weather lasts, from December to March. In 1849, 687 tons, 17 cwt., was brought from Aberdeen.

1318. You also bring cattle from Inverness at one portion of the year?—Yes, but seldom more than 10 or 20; but we bring a large quantity of pigs from Inverness, 500 or 600 in a ship, at certain times of the year.

1319. Is yours an increasing or a diminishing trade?—It has been increasing very much up to the present time, but now the railway is nearly open to Aberdeen, it may have some slight influence upon our trade, but I do not expect it will have much with regard to cattle, because we consider that we bring the cattle in a better condition than the railway can.

[*The Witness withdrew.*]

Mr. J. Chippingdale.

Mr. Josiah Chippingdale examined.

1320. Are you the agent of the General Steam Navigation Company at St. Katherine's wharf?—I am, and at Brown's wharf also.

1321. Do the steamers belonging to your company import any quantity of foreign cattle into England?—Yes, large quantities.

1322. From what ports?—From Hamburg, Rotterdam, and Tønning or Tønningen.

1323. By whom are they consigned to England?—From Tønning, and, in fact, from all the ports, they are generally consigned by small farmers and dealers to the different salesmen in London.

1324. Are they cattle and sheep that are sent?—Yes; cattle, and sheep, and calves.

1325. Are they sold in Smithfield market on account of the foreigner, or are they brought to the salesman and sold on his account?—Sometimes one and sometimes the other. I should say they are principally consigned to the salesmen for sale, and the proceeds remitted to the shipper.

1326. Do you believe that the cattle suffer much from the voyage, or that their value is deteriorated by the voyage?—Not at all generally; but in very bad weather they are injured sometimes.

1327. The salesmen have agents abroad, have they not?—I think they may have agents abroad, but the salesmen very frequently go over, particularly to Tønning, in Denmark, from which place the importation of cattle is comparatively of recent date.

1328. Are the Schleswig cattle the best that come over to England?—I think we have as good cattle from Rotterdam as from any place abroad.

1329. At what time are they generally landed?—That all depends upon the arrival of the vessels. They arrive at all times, and are landed at all hours. There is no restriction of the customs upon their landing.

1330. What is done with them when they are landed?—They are taken away to the different lairs, unless it is on the eve of the market, and then they are taken to Smithfield direct.

1331. Is there much difficulty in disposing of them on their arrival?—No. The salesmen or their agents are in constant attendance, and as soon as they are inspected by the customs' inspector of cattle they are taken away.

1332. Are the arrivals more frequent on the Saturday than on other days?—They are more frequent on the Saturday and Sunday, with a view to the Monday's market. We had two very large vessels on the Tønning station in the last season, the "Wilberforce" and the "Trident." The departures were arranged so as to suit the markets here, but owing to exceedingly boisterous weather and difficulties of navigation, with which but few vessels could have so successfully contended as they did, their arrivals were not exactly regular.

1333. Do you import any dead meat from abroad?—We import a little from Hamburg. That is the only port from which dead meat comes to this country.

1334. Is that taken to Newgate market?—It is taken to Newgate and Leadenhall markets.

1335. Can you give the Commissioners the amount of foreign cattle that you have imported during the year?—I can furnish that. Speaking in round numbers, I should say we imported from 12,000 to 14,000 last year.

1336. Has the trade in foreign cattle increased, or is it stationary?—On the whole, I should say it is increasing. From Rotterdam I think it is not just now increasing, but there are fewer coming from there.

1337. From Tønning is it increasing?—Yes; that is a new port comparatively.

1338. Is it within your knowledge that many persons in this country are making arrange-

ments with respect to the importation of cattle from abroad?—I am not aware that more than ordinary arrangements are making. January 9, 1850.

1339. Is the dead meat inspected before it is sent on to Newgate market?—It is only inspected by the customs. It is not inspected by a meat inspector before it arrives at the market. Mr. J. Chippingdale.

1340. It is not inspected with regard to its quality, but merely for custom-house purposes?—Both. In the former by the market inspector, in the latter by the officers of customs, by whom it is also partially weighed for statistical purposes.

1341. Are not many of the Smithfield salesmen connected with the importation of foreign cattle into this country?—Yes; a good deal of the foreign cattle is imported, I have no doubt, by Smithfield salesmen on their own account. I believe the Tanning trade originally commenced in that way.

1342. Do you know whether Englishmen have gone to settle there with a view to supplying the London markets with meat?—No, I do not know that; but I know that Englishmen go over in the course of the year, when cattle are sent from abroad, in order to induce the farmers to send them to particular salesmen.

1343. Are the live cattle inspected with regard to the duties, or with regard to the state of health in which they are?—There is no duty on foreign cattle, but they are inspected by the tide surveyor or the landing waiter, who are customs officers, to ascertain their sex and quantity; they distinguish between cows and oxen, but only for statistical purposes.

1344. Is there any inspector to ascertain the state of health of the cattle which are landed from the vessels?—Yes, there are two veterinary inspectors of cattle—one for the upper station, and one for the lower station.

1345. What happens if they find diseased cattle; how do they deal with them?—They are examined on being landed, and if they are at all diseased, they are detained, and are further examined subsequently, when, if the opinion as to the diseased state is confirmed, the animal is condemned, and it is slaughtered and taken away to the knacker's.

1346. It does not get into the market, as far as you know?—Certainly not; but if there is any difference of opinion between the importer and the inspector as to the state of the cattle, reference is made, and the matter dealt with accordingly.

1347. But there is no similar inspection of dead meat that is brought from Hamburgh?—Not on the wharf, but there is an inspection of it when it goes into the market. Every market has an inspector.

{[The Witness withdrew.]}

Mr. John Harper examined.

Mr. J. Harper.

1348. Have you been engaged as a grazier, and also as a butcher?—I have.

1349. Were you employed by Mr. Perkins, the projector of the Islington market?—I was engaged by him in 1834, and I continued to be connected with the Islington market till 1840.

1350. Are you aware of the proceedings before the Committee of the House of Commons in the years 1834 and 1835, with reference to the Islington market?—I was the principal party in getting up the Evidence on that occasion, and in establishing the Islington market.

1351. Had you, during the time that you were connected with the Islington market, occasion to investigate the whole subject of the supply of the metropolis with live and dead meat? I endeavoured, and I think with some success, to make myself acquainted with the whole arrangements. Perhaps I may be allowed to state, that in the year 1836, I was in Smithfield market every Sunday night from the time of holding Bartholomew fair in September to the great Christmas market.

1352. Has your connexion with the Islington market now ceased?—It has, entirely.

1353. Are you connected with any other project with reference to cattle-markets in London?—None whatever.

1354. Are you in trade at present?—No; my son is farming an estate in Cheshire of 200 acres, in which I am interested, and I go there occasionally.

1355. Are you acquainted with the present state of Smithfield market?—I am. In February, 1847, Mr. Perkins having died the previous year, Mr. Gurney and some gentlemen in the City purchased the Islington market, and sent to me to request me to come back to the market; and I then took the management of that market a second time.

1356. Has that been the occasion of your making yourself acquainted with the present state of Newgate and Smithfield markets?—It has.

1357. What do you consider to be the principal advantage of Smithfield market as it at present exists?—The advantage, if any, of Smithfield market, is the convenience to the trade of having it in a central part; that may be an advantage to the trade as far as convenience goes.

1358. What do you consider to be the disadvantages of Smithfield market with respect to the trade of butchers?—The disadvantage to the trade of butchers is, the great injury arising from the animal being in so much worse a state for slaughtering when they are got home than they would be with a well-arranged market without the City.

1359. How does that difference arise?—From the fatigue and ill-treatment which the animals necessarily undergo from the want of space and proper places to arrange the stock in the market, the drovers having only the streets and avenues in which to part them.

1360. Have you been in Smithfield market during any of the nights preceding the Monday

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market?—I have. In 1847, having heard that the arrangements were so much better than they had been prior to 1836 and 1840, I went to Smithfield market, in order to see whether there had been any improvement, and I was there two or three nights, with a view to satisfy myself upon it, and I found that the market was as bad as it had been when I visited it before; for though they had given a little more space, the supply had increased so much as to make it quite inadequate for its purposes.

1361. Are the animals much forced and beaten, in order to bring them to the places where they are to stand?—They are; it is most revolting; the scenes that are to be witnessed from 12 o'clock at night to 5 or 6 the next morning are the most extraordinarily cruel that can be imagined. As to their being described, I do not think it is possible.

1362. In what manner are the animals treated?—On the Sunday night there are, perhaps, 10 or 20 different droves of beasts, of 80 to 100 each, collected in the streets leading to Smithfield, waiting for the clock to strike 12. When the clock strikes they are all driven into the avenues in Smithfield, and then the process commences of tying the animals up. This is done by driving two or three bullocks to the rail, where a man is standing with a rope; they catch one by the neck, the rope having a running noose. If the animal is quiet, it is so much the better for them, but some of those animals have, perhaps, never seen a rope before, particularly the young and light, or small beasts, that come up fresh, and the only mode of keeping them to the rail is by choking them into compliance. That being done, and two or three or more being tied, then, perhaps, comes a beast from another drove, and runs into these beasts that are tied up; they are all thrown down, and would be strangled if the drovers did not cut the ropes, or the beasts were not untied. This is constantly going on, more or less, during the whole of the night, and the arrangement is the most cruel that can be conceived. With the noise of the dogs, the swearing of the men, and the beating of the animals over the horns and head, it is a scene that must be witnessed to be understood. I do not think the drovers are altogether to blame for beating the animals; it is, to some extent necessary, for they have no other means of placing them in the market. Sometimes it happens that a bullock will get out from one man's drove into three or four others, and then up St. John's-street, or some other street; he has then to be got back, and placed again at the rail. These and such like proceedings are constantly taking place during the whole of the night.

1363. Does this take place by torchlight?—Yes; and the drovers are obliged to bring their torches very close. The animal has only a cut in the hair to enable the drover to arrange his employer's beasts as ordered, and that cut is frequently so filled up that they are obliged to put the torch close to the animal to discover the mark, this alarms the animal, and makes it like its position and treatment still less.

1364. Is the difficulty increased if the night is a wet one?—Yes, very much, the rails being very slippery, and the ropes very stiff. There is hardly a drover in the market who has not had his fingers broken by having them caught in a rope at some time or other.

1365. Is it necessary to beat the animals with considerable force?—Yes, with very great force, both in tying them up and forming them in droves. After about 2,000 are tied up, which is all they have tie-room for, comes the process of filling up the intermediate spaces, by what is called ring-droves, and in the formation of these there is a great deal of beating and goading the animals over the head, horns, legs, &c. It is done by 14 or 15 animals being placed with their heads forming a circle, and their horns in each other's faces—a most unnatural position for bullocks to stand in—and this is done by downright force and beating. They call it hunting, or heading them up.

1366. Is it done by dogging?—No; the dogging is in order to get them up when they are down; generally in the day-time.

1367. Do the difficulty and delay in bringing the animals to their proper position induce a habit of drinking among the drovers?—Yes. In wet nights, when they are very much fatigued, they are driven to drink. The public-houses are open all night, and the drovers come from their work in a state of excitement and fatigue. If the animals resist much and give trouble, they are very much annoyed, and get out of temper, and beat them; their treatment of the animals is exceedingly bad. I do not think it is possible to convey an idea of the cruelty practised there; I could not have believed it if I had not seen it.

1368. Are the animals beaten about the head and face as well as the body?—It is about the head, and nose, and horns that they are most beaten, and also about the legs. The drovers know where to strike the animals exceedingly well; they are very expert; they have a great deal of practice.

1369. Does the process you have described heat the blood much and injure the quality of the meat when the animal comes to be slaughtered?—Yes, very much. An animal killed in hot weather from Smithfield on Monday will be frequently unfit for human food on the Tuesday evening.

1370. How are the sheep treated?—They are punished by the dogs and by beating, but my opinion is, the sheep are not so much punished as the cattle: they are very badly accommodated; the alleys are very narrow and bad, the pens four or five deep, and from the want of proper dividing pens, causes a great deal of cruelty, but not so much as the cattle suffer; still it is very bad.

1371. Is this treatment of the animals injurious to the graziers?—Yes, it depreciates the animals very much, so much so that the salesmen are obliged to sell them for what they will fetch; and the graziers suffer great loss when the animals have been once in Smithfield, from the punishment they have received there. If you take them out and keep them three or four days, or a week, they waste very much. I think it a fair calculation that a bullock of from 80 to 100 stone would be injured from 30 to 50 shillings; his value would be that much less.

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1372. And that would not be sustained if there were sufficient room in the market for all the animals?—Certainly not.

1373. What do you suppose is the deterioration that takes place in sheep?—Sheep deteriorate very much, but they being part of the year in their wool, do not appear so bad. I should think the deterioration in all sheep sold in Smithfield on the first day is from 6d. to 1s. per head, and on all those turned out unsold, from 2s. to 5s. per head.

1374. Supposing it were decided that the area of Smithfield market was too small, do you think that sufficient space could be found in the neighbourhood of Smithfield market for its enlargement?—Never. My opinion is, that increasing the space will only get rid of a small part of the want of accommodation; it would not remove the nuisance and cruelty of tying the animals up in the night, and keeping them so many hours without water, or the driving them through the streets in the middle of the day, or the arranging the market by torchlight.

1375. Could the avenues into the market be made sufficiently large?—I do not think space can be obtained; the avenues are not so bad as the deficient space. If you got improved avenues you would remove a very small portion of the difficulties of Smithfield market.

1376. Did you attend Smithfield market on the great day at Christmas?—Yes.

1377. Did you observe whether the streets were obstructed or not?—They were; the cattle stood worse than I ever saw them: there was more cruelty. All the streets were blocked up during the whole day. A policeman was placed at Giltspur-street to prevent anything passing through. All the thoroughfares were closed till four or five o'clock in the evening. The bullocks completely filled up the streets until that time.

1378. Was it inconvenient to the neighbourhood that the thoroughfares should be so much obstructed?—Very much so.

1379. Are you aware that accounts are published of the number of bullocks and sheep sold in Smithfield market on each day?—I am.

1380. Do you know by whom those accounts are prepared?—By the clerk of the market.

1381. Do you conceive that it is possible for him to render an accurate account of all the animals sold each day in Smithfield market?—He cannot do it at all; he is obliged to take it from other people.

1382. How are the accounts prepared?—He takes the number from the salesman.

1383. Are you aware that those accounts show a stationary number of sheep sold in Smithfield market?—If they do, I should say that they cannot be correct. I do not know of my own knowledge that that is so, but assuming that it is, I do not think the accounts can be correct as to the numbers, for the number varies very much.

1384. Are any cattle and sheep sold in Smithfield market which are not brought to account?—Yes, I believe there are. The only account the clerk of the market has to depend upon is the statement he gets from the money-taker, and the money-taker makes his return from the numbers rendered by the salesmen themselves.

1385. Is there not a toll paid on all cattle and sheep brought into the market?—I believe only on those sold. There is no toll paid for the beasts or sheep turned out unsold, nor do they appear in the numbers returned weekly; so that thousands of beasts and sheep come in and out of Smithfield in the year that neither pay toll nor appear in the City returns. A salesman has more sheep than he can get pens for; he sells one or more lots; gets them taken away, and refills the pens, until the whole are disposed of, but pays only once for the pens.

1386. He would pay only one toll?—Yes; he might fill the pens two or three times over, but would only pay for pens once.

1387. According to the present way of making up the tolls, would that appear as one set?—Yes; it depends entirely upon the return which the salesman makes to the money-taker. The clerk of the market has no means of counting the numbers; he is obliged to depend upon the returns made by the money-taker and salesman.

1388. Assuming that the absolute numbers in that return are not correct, do you think the comparative numbers are not to be depended upon?—I do not think the returns can be depended upon.

1389. You would not have any confidence in them?—I think the business is so conducted that the account is not to be depended upon.

1390. But that is a matter of surmise on your part?—I only know it as I have stated.

1391. Are you acquainted with Newgate market?—I am.

1392. Does it appear to you that there is sufficient space for the sale of meat in that market?—Decidedly not.

1393. Is there inconvenience arising to the trade from the want of space in that market?—Yes. a great deal of inconvenience and loss.

1394. In what way?—The salesmen have not room when meat is consigned to them to display it, and it is obliged frequently to be put down in the cellars, and to lie there sometimes for four or five days before it can be exposed for sale, and the market is in every way inadequate to its requirements.

1395. Would you advise the removal of the live-stock market to some place in the north of the metropolis?—Yes, I should.

1396. What do you say as to the present site of Islington market. Does that appear to you to be adequate for the purpose?—I think it is not large enough.

1397. What space does that market cover?—The space occupied by the market is 15 acres within the walls. There are 12 or 14 acres outside, but part of this is, I think, hardly applicable. My opinion is, a larger space should be obtained; that foreign cattle should not be

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brought into the same market as English cattle, and that would occasion the want of more space.

1398. Why would you wish to separate the foreign cattle from the English?—I am of opinion that, however close and well-arranged the inspection may be of foreign beasts and sheep when landed, it is impossible to prevent the bringing some diseased ones. The English graziers have already suffered very much from German and Spanish sheep having been brought over with the small-pox. A nobleman near London purchased some foreign sheep in Smithfield market in the autumn of 1847, with small-pox, which soon infected his English flock, he having at that time about 5,000, out of which he lost 1,800, and many were sold for about 2s. 6d. per head; but if English and foreign cattle and sheep were placed adjoining each other in a separate market the advantages that were intended from the supply of foreign sheep and cattle for food would be obtained without the danger of foreign diseased stock mixing with the English.

1399. Would you have the market for foreign stock immediately contiguous to the market for English stock?—Yes.

1400. And you would also have public slaughter-houses there for the convenience of the trade?—Yes.

1401. What area would be sufficient for the whole of those establishments?—It would require, I think, from 40 to 50 acres; for I am of opinion that the calf and pig-market should be also separate. There should be a large market in the centre for the English sheep and cattle, with a small market on one side for the foreign stock, and a calf and pig-market close by.

1402. Is there any other site besides Islington that has occurred to you as being suitable for a cattle market for the metropolis?—Yes; there is a great deal of unoccupied land north of Islington which it would be desirable to inquire about. I think Islington would scarcely meet, from want of space, the requirements suggested. It is not the place that I would now select for so great a market, if there was nothing there already erected.

1403. What locality would you select?—I would suggest the neighbourhood of the New Prison as being a good site with ample space, and well situated for railway communication. When the Islington market was established, the site was good, as all the cattle came by the turnpike road, but now they come by railway. I think it is a little too much east, though it is well situated for the foreign stock, as the East and West India Dock and North-Western Railways come within a quarter of a mile of the market, and, therefore, would bring the foreign stock without coming through the streets of London.

1404. Islington market lies in a bottom, does it not?—It does, from the north; but my opinion is, that no difficulties present themselves to prevent its being well drained, and that a good market might be made there if sufficient space could be obtained.

1405. Has not its surface been cleared away?—Yes; eight or nine feet of brick earth has been taken out, which brings the present surface down to the gravel. I question, however, whether that is not an advantage to the drainage.

1406. But there is a rapid descent into the market?—Yes; that is in consequence of the excavation mentioned; but still it is between 50 and 60 feet above the level of the Thames. The drainage, as well as its other capabilities, was well investigated before the Bill was passed; one.

there were five or six oppositions, and the Corporation of London was a very formidable

1407. Are you acquainted with the foreign cattle-market as it is carried on now in this country?—Yes, I believe I am.

1408. Will you state to the Commissioners anything you know with reference to the manner in which it is conducted?—I am of opinion a great injury to the English grazier arises from the fact that many of the largest salesmen, who have the largest and best stands in Smithfield market, are connected very extensively with the foreign cattle trade, and when they have a large number of both descriptions of cattle, they frequently put in the foreign and keep out the English, not having space for both. I think that, generally, the foreigner takes care to have some one in the market, either belonging to the cattle or as agent, and this, perhaps, may be one reason why the foreign cattle are accommodated in preference to the English. There is also an opinion very much entertained, that the salesmen are themselves connected with the foreign cattle trade beyond their commission. I know one salesman who was or is a grazier in Holland, having, some time ago bought an estate there, and he is, I expect, preparing to supply the English markets extensively.

1409. What is his name?—Mr. John Lowe. I think that the great desire the Smithfield salesmen have to increase their foreign cattle trade is a sufficient reason for giving the English graziers the means of better protecting their own interests by letting them have a market to themselves, or one sufficiently large for all of them to be equally accommodated.

1410. Would you establish a separate market for foreign cattle on any other ground than that of preventing the sale of diseased animals?—Not if there were a large and adequate market where all interests could be equally represented; but I would do so as long as the market is so inadequate, and business is carried on as it is now, where English cattle are left out in the yards or lairs till ten, or eleven, or twelve o'clock in the day, losing the best purchasers, the West End butchers, who come to buy early and are supplied. The English cattle are then sold to the wholesale butchers at from 4d. to 8d. per stone (of 8lbs.) less.

1411. Would you wish to place the foreign cattle in a more disadvantageous position than the English?—Certainly not. We want a market sufficiently large for all to have an equal chance of sale, neither having the preference.

1412. According to your view at present, the foreign graziers have the preference in Smith-

field market?—Yes; inasmuch as the largest and most influential salesmen in Smithfield have the largest and best stands, and they get nearly all the foreign cattle.

1413. All this would be obviated by having a market of a sufficient size?—Yes; in a large market there would be no reason for separating foreign and English cattle, except the fear of decease.

1414. What are the usual days of the arrival of foreign cattle?—The Rotterdam boats—Wednesdays, Thursdays, Saturdays and Sundays; Harlingin boats—Thursdays and Sundays; Hamburgh—Mondays and Fridays. All the mail boats arrive on Sundays, and occasionally bring cattle.

1415. Will you describe the process which takes place on the Sunday when the cattle are brought over?—Great numbers arrive on the Sunday morning, and when landed, there being no place for them to remain, are compelled to be driven through the streets in different directions to the layers; many being sent to the yards round Smithfield. Thus from Blackwall, Whitechapel, Islington, and the whole of the north and east of London, it is the busiest day in the week. A great many calves are brought over from Holland; they are all obliged to be carted, and the desecration of the Sabbath is most disgraceful. Large numbers of persons of the lowest description are necessarily engaged in driving and arranging the stock for the Monday's market.

1416. What number of persons do you suppose are thus employed on the Sunday?—I have no doubt, as many as 2,000 are thus employed.

1417. Do you include the people bringing up the cattle on the different railways?—I include only those employed in and near London, in preparing for the market.

1418. Do you include those employed in bringing the cattle from the railway termini?—Yes; I include all those employed in bringing the stock to the market.

1419. What class of persons are employed in that way?—The money-takers and their clerks, the salesmen, the drovers and their men, Smithfield market clerk and his men, the layer keepers and their men, caravan keepers; and great numbers of the lowest class of people go on Sunday mornings to the different railway stations and wharfs, among them boys from eight years old and upwards; these go to look for a job of driving, and hundreds of the sheep and beasts are placed in the hands of these boys, and the treatment the animals receive from them is frequently very bad; the drovers employ them for cheapness. It is also a very busy day with the salesmen, as they have to go to the different lairs to mark the cattle, and to prepare written instructions for the drovers to arrange their cattle and sheep in Smithfield, so that all the arrangements may be complete on their arrival at 6 or 7 o'clock on the Monday morning. This must be done whatever may be the difficulty.

1420. Would all this be obviated by the Monday market being changed to Tuesday, and the site also being changed?—Yes, a change in the day of holding the market would not be sufficient to obviate the evil without a change in the site; in Smithfield so much time is taken up for want of space and better accommodation; the change of the day alone would not get rid of the evil, it would only get rid of part.

1421. How much of the evil would remain if the site were changed, and the day of holding the market remained the same?—Perhaps one-third.

1422. If the day were changed from Monday to Tuesday, would not there still be the inconvenience of Sunday driving?—No; not now the cattle come by railway; they would have all day Monday and Monday night to travel up, which would be sufficient. At Norwich, where they hold the cattle-market on Saturdays, the beasts are in London at 6 and 7 o'clock on the following morning.

1423. Do you think there is much diseased and bad meat sold in Newgate market?—A good deal in the market, but more in the slaughter-houses, and in and around London.

1424. What becomes of that meat?—It is purchased by the soup-shop proprietors, sausage-makers, the alamode-beef and meat-pie shops, polonies, &c. There is one soup-shop, I believe, doing 500*l.* per week in diseased meat; this firm has a large foreign trade. The trade in diseased meat is very alarming, as anything in the shape of flesh can be sold at about 1*d.* per lb. or 8*d.* per stone.

1425. Will you answer the question with regard to the City?—The City has improved; they appointed an additional Inspector in January, 1849, and they do not do it so openly now; but I believe it is done privately, and to some extent.

1426. Will you tell us what you know?—Yes, I have been watching it for a considerable time, and perhaps I may state that I brought the subject before the Board of Trade in 1848, when it was satisfactorily proved that diseased meat was sold in Newgate market, and also in Tylor's market to a very great extent; in consequence of which two Bills were passed, one to prevent the importation of diseased foreign stock, and the other to prevent the sale of diseased meat.

1427. To what period are you speaking?—From 1847 up to the time the new Inspector was appointed in January, 1849, before which diseased meat was sold to an enormous extent: it has been, however, considerably lessened since the appointment of the additional Inspector; but they do not go beyond the City.

1428. They have no power of going beyond the City?—No.

1429. Would you advise a similar inspection to extend over the metropolis?—Yes, I should.

1430. Would any amount of diseased meat find purchasers?—Yes; I am certain that if 100 carcasses of cows were lying dead in the neighbourhood of London, I could get them all sold within 24 hours; it don't matter what they died of.

1431. Do you believe it possible by any inspection to prevent the sale of unwholesome meat in the metropolis?—Yes; I do not think there is any difficulty in preventing it.

1432. What sort of inspection do you contemplate?—I think it should be similar to that

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now adopted in the City, but on a more extensive scale. That practical men be appointed to attend the live and dead markets, the slaughter-houses, lairs, railway stations, &c., with full power to seize all diseased animals, or diseased meat wherever it may be found. Also with power to search all places where it may be supposed that the sale of diseased meat is carried on. It is chiefly done by a class of persons who are well known, and it is the power to search these private places that the inspectors want.

1433. If there is a large number of persons who wish to sell diseased meat, and a large number of persons who wish to buy it, do you believe that any inspection by Government officers can prevent their finding one another out?—I do, if when you catch them you punish them severely; the value of such meat is not much, and its sale would be very soon prevented if a strict inspection were adopted, and the parties were punished by fining sender, seller, and purchaser, and by increasing the penalty for every fresh offence.

1434. Is there any slaughtering of bad meat in the country for the supply of the London market?—The London market is very extensively supplied with diseased dead meat from the country. There are three insurance offices in London in which graziers can insure their beasts from disease; it was the practice of one of these offices to send the insured animals dying from disease to their own slaughter-houses, situate 160 miles from London, to be dressed and sent to the London markets.

1435. What do they insure?—Cattle, sheep, &c., are insured against all kinds of diseases, and one of the conditions is, that the diseased animals when dead become the property of the Insurance Company, the party insuring receiving two-thirds of the value of the animal and one-third of the salvage; or, in other words, one-third of the amount the beast is sold for when dead.

1436. Is the diseased animal sent to be sold?—Yes, it is.

1437. Do you believe it is the habit of this Company to send up the diseased animals to London?—Yes, I do; until lately they were regularly consigned to a meat salesman in Newgate market of the name of Matthews.

1438. Is that practice continued now?—No, I believe not in Newgate market; it is done more privately; more in the slaughter-houses and private places out of the City.

1439. Could the public defend themselves against diseased meat as easily as against bad bread, or bad sugar, or anything else?—No, it is very difficult to detect it; and besides, it is not sold to the consumers in the first instance. The larger quantities are sold to people who manufacture it into soup, meat-pies, sausages, &c.

1440. Is there always a market for this dead meat?—Yes.

1441. Could the mass of the people be imposed upon by bad meat?—Yes, when manufactured as before described. There is a class of people who will buy some of the best joints in its raw state. The butchers in low, poor neighbourhoods chop it up into small pieces, and, by the light of gas, sell it to the poor in large quantities.

1442. Is it unwholesome meat, or is it only poor, ill-fed meat?—In some cases it may require some discrimination to determine the poor from the diseased meat; but when it is known that such large quantities of the worst description of diseased meat is sent to London, a distance of 160 miles, as in the case of the Insurance Company, it is evident that the greater portion is diseased.

1443. You believe that the poor meat which is sold is unsound?—Yes, the greater portion. I am aware that there is rough and coarse meat which is sound, but I am speaking of very poor meat. Supposing a very poor beast to be 60 stone—and it would be a very large poor animal to be that weight—and this poor meat only fetching 1d. per lb., or 8d. per stone, which is the common price, a large beast would only make about 27s., and, including the offal, not more than 27s. 10s., when the same sized animal, however poor, if sound, would be worth for store 8l. or 9l.; it is not, therefore, probable they would kill such in the country, or send them here alive, were they not diseased.

1444. Do you think it is important for the trade that the dead-meat market should be in the immediate neighbourhood of the live-meat market?—No; I think it would be much better that a meat market should be established in the centre of London, or on the site of Smithfield. This would be sufficient for the purposes of the butchers, and far better for the interest of the graziers.

1445. Would it be an inconvenience to the butchers to have to attend those two markets if they were at a distance of a mile or a mile and a half from each other?—My opinion is that the butchers would find no difficulty in it, but could attend the two markets very easily.

1446. Have not the butchers a good deal of time on their hands?—Yes, a good deal; they have but little to do in the after part of the day.

1447. A butcher's shop is not a shop which requires constant attendance?—No; the business is done in the mornings, in two or three hours—from eight o'clock in the summer, and from nine o'clock in the winter, until about eleven or twelve, and then they do as they like for the remainder of the day.

1448. The foreman can transact all the ordinary business of sale?—Yes; there is very little occasion for the master after the morning.

1449. Would not the masters have a facility for attending markets at a certain distance from each other if the markets were so arranged?—Yes. They now attend Southall, Croydon, and Romford; and when the cattle used to come by road instead of railway, they found time to go 20 and 30 miles to meet them, and that on a Saturday, which is their busiest day.

1450. Do you know whether the practice of consigning live cattle to butchers in London is at all on the increase?—It is, and am surprised that it is not more so, as there is no doubt the animals purchased in Smithfield are more or less injured, not only from bruises, but from excitement and irritation. The meat will not keep so long, and the quality is not so good.

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This is avoided by the butcher who has his cattle consigned direct to him from the grazier, which I would advise all butchers to do.

1451. If a large market were established in lieu of the present Smithfield market, would you still give that advice?—No, there would be no occasion then.

1452. Do you know the number of sheep slaughtered in the cellars of Newgate market?—It is somewhat difficult to ascertain the numbers correctly. There are more than 50 different places for slaughtering in Newgate and Tyler's markets, and should think that from 2,500 to 3,000 per week was a fair average.

1453. Are you aware that many salesmen in Newgate market are also carcass butchers?—Yes.

1454. Is there any disadvantage in the combination of those two trades?—Yes; I have no doubt that the interests of the persons consigning meat to them is endangered by it, as they would, as a matter of course, give the preference to their own meat.

1455. Supposing that the dead-meat market were retained, or that it were near to the site of the present dead-meat market, would you advise that the salesmen should be debarred from following the trade of carcass butchers if they thought fit so to do?—No; I would be satisfied with a good open live-cattle market with sufficient space out of the City away from the dead-meat market.

1456. Would you establish any dead-meat market in the neighbourhood of the live-stock market?—I do not think it would be necessary further than having sufficient slaughter-houses. It may be found convenient to have a carcass market, but not a dead-meat market.

1457. Would you have any market on the southern bank of the Thames?—Assuming that Smithfield market was removed north, it would take the market so much further from the south, if a small market, with layers and slaughter-houses, were established somewhere in the south of London, it would answer; but it would be but a small concern.

1458. Whereabouts would you establish such a market?—Somewhere near the Vauxhall Station, I think, would be a very desirable situation; but I am not aware of any particular site: and I would also have the market held on the Thursday: I believe in the summer it would be very convenient for lambs and calves. The butchers on the south side of the Thames, if the market were removed, would have further to go, and might therefore require accommodation on their side of the water.

1459. Have you ever inspected the ground near the New Prison?—I have.

1460. Do you consider that well situated for a cattle market?—I think there can be no doubt about it.

1461. Copenhagen Fields?—No. I am of opinion that the site nearer the New Prison would be the best; there is a large tract of land, and no neighbourhood, and well adapted for the purposes of a live-cattle market.

1462. Would it be possible to equalize the sale of cattle on the two days in the week on which the market was held?—Yes, if the market days were changed from Monday to Tuesday it would be beneficial, for the butchers would have to purchase on the Friday for the Monday's killing; and consequently the Friday's market would increase, and the Monday's decrease: it would equalize the supply, and would be very important.

1463. Would not the effect of equalizing the two markets be to economize space?—Decidedly.

1464. At present, is not Smithfield market required to be so large as to accommodate the greatest number of animals that are ever sold in the Monday market?—Yes; it is not a practical view to take the average of supplies to a market; the live-cattle market should be sufficiently large to hold any quantities that may be sent; and I am also of opinion that provision should be made for a great increase in the supplies; that a large quantity of store cattle would come if a good market was provided for their accommodation.

1465. What you mean is, that the market must be large enough for the largest number of animals that may be brought?—Certainly. There is no difficulty in holding a small market in a large space; but the inconvenience is, to hold a large market in a small place.

1466. Your idea is, that there should be a market in lieu of Smithfield, held on Tuesday, and Friday; and also a market to the south of the Thames, held on Thursday?—Yes, that is my opinion.

1467. You have spoken of the deterioration of the cattle that takes place in consequence of their coming into Smithfield market. Did you ever calculate the loss of the stock annually brought, by ill usage or driving, or from the manner in which the business is conducted in the market?—Yes, I have calculated it, and have no doubt that the loss sustained annually, in consequence of the bad arrangements of the live and dead markets in the metropolis, amounts to 200,000*l*.

1468. By whom is that loss sustained?—By the graziers and the public.

1469. Will you be good enough to state how you prove it?—I will first take the loss to the graziers:—It is estimated, and I believe correctly, that the returns of Smithfield market is 7,000,000*l*. a-year. I take that two per cent. on that sum would give 140,000*l*. a-year as loss to the graziers.

1470. How do you arrive at that?—There are large quantities of beasts and sheep turned out of Smithfield market unsold on many market days: on these animals the loss is very great, they waste so much. On all animals the loss is considerable, from the fatigue and injury they undergo there. Their appearance is so bad that a bullock of 80 stone would appear about 70 in Smithfield. Then the arrangements for showing the stock is very bad, and there can be no doubt that the loss to the grazier is full two per cent. on all animals sent there. The next loss is to the butcher, and consequently to the public, from bruised meat, which is very considerable; taking it at 3*d*. per head on sheep, and 1*s*. 6*d*. per head on beasts, will give a loss of from

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30,000*l.* to 40,000*l.* per annum. There is also a very great loss from the animals being kept by the butcher after he gets them home. He leaves them a few days, hoping they may get settled and fit to slaughter, but from the injuries they have received in Smithfield, they moan and waste, and get worse. Then again, the butchers, after purchasing, finds the weather unfavourable for slaughtering, which induces him to keep them alive; this also occasions great loss, and likewise the meat is much deteriorated. Great losses are likewise occasioned by the bad arrangements of Newgate market, from the close, unventilated shops where the meat is exposed for sale; the slaughter-houses in the cellars being underneath, and the families residing above, necessarily prevents any air from reaching the shops; the consequence is that meat spoils 24 hours sooner than it would in a well-ventilated market. This, if only for five or six months in the year, occasions another enormous loss to the public. This, I believe, will fully make out the loss as estimated. There are likewise many other losses and expenses the butchers are put to, which may to some extent account for the difference between the low prices of stock in Smithfield and the prices of meat to the London public. It is well known that Smithfield is the cheapest live cattle market in England, and the offals here bring more than anywhere, and yet the public in London are paying considerably more for their meat than in the country.

1471. We have it in evidence here that the butchers benefit greatly by the close approximation of the live and dead meat markets, because he is able to regulate his purchases by comparing the prices of the two. From your practical knowledge, should you say that the public benefit as much by that as the grazier loses?—Certainly not; this gives the butchers a very great and unfair advantage over the grazier, which it would be very desirable to remove.

1472. Then is it from the facility afforded by the close proximity of the dead and live-meat markets that the butcher is enabled to get meat at less than its value?—Yes. I am aware the advocates of Smithfield market make the proximity of the two markets a great point, and being of a contrary opinion, am desirous, if the Commission will permit, to go into this part of the question at some length. I consider there is no one cause for the removal of Smithfield greater than the taking it from Newgate. By the approximation of these markets, the butcher has an unfair advantage over the grazier; he first goes to the live markets, sees what is there, and then goes to Newgate, tells the Newgate market salesman that he can purchase live stock at such a price, and then returns to Smithfield, telling the salesman there how cheap he can purchase meat in the dead market; this is done many times during the day, and has the effect of disarranging the calculations of the salesman; he knows it is to the interest of the grazier to sell, and have no means of ascertaining whether the statements made by the butchers are correct or not, which has the effect of placing the live market under the control of the dead, thereby giving the large carcass butcher in Newgate market an unfair monopoly, and the trade of butchers an undue advantage over the grazier. By placing the live and dead markets a mile or two apart, this would in a great measure be obviated, and the graziers much benefited. The public would reap the advantage, not only by having a better quality of animal food, and also by having the disgraceful nuisance of driving cattle through the streets removed, and by the removal of which nuisance none but a few interested in the present markets would be interfered with.

1473. Are there any other details?—Yes; all tending to show the great benefit which will arise to the graziers and public at large by the removal of Smithfield.

1474. Would all those evils be cured, in your opinion, by an enlarged market and a proper place?—Yes, certainly. I do not know what this Commission will decide as to slaughtering, but if they do decide in favour of retaining private slaughter-houses, they must prevent the cattle being driven about London in the day-time.

1475. What is your opinion about slaughter-houses?—My opinion is, that all commission or public slaughter-houses should be abolished, with all those under ground; that the private slaughter-houses should have a back or separate entrance, the live animals not to be driven through the shops; that regulations be made and inspectors appointed to prevent improper practices in the private slaughter-houses. If this plan were adopted, and the slaughter-houses allowed to remain, I have no doubt the advantages of slaughtering near the live market would become so apparent, there would be no necessity for a compulsory Act to prevent slaughtering in London: those persons who have slaughter-houses would find it advantageous to slaughter at the live market out of town.

1476. Would you give the inspector power to close a slaughter-house that was not kept in a proper state?—No; I think the inspector should only have the power of summoning the owner for misconduct, and letting him be heard by some appointed authority.

1477. Would you give the magistrate the power in case a slaughter-house was improperly kept of prohibiting it?—Yes, or of fining the offender at his (the magistrate's) discretion.

1478. In your judgment, would the respectable part of the trade object to that?—I think not; the respectable part of the trade desire to have the option of using their own slaughter-house, which I consider they should have under proper regulations.

1479. Are you aware that, under the City Local Act, parties are prohibited from opening a slaughter-house in any new situation?—I am not aware of that.

1480. Do you think such a regulation as that could be introduced for the whole of the metropolis?—I think not; but if the slaughter-houses were put under proper regulations, it would be hardly necessary; and as new neighbourhoods are springing up so rapidly in the suburbs of London, if they are permitted in one place they should be in another.

1481. Would not a regulation to that effect give a monopoly to the existing slaughter-houses?—Yes, I think it would.

1482. Would not the site of every existing slaughter-house become valuable, inasmuch as it would have a legal monopoly?—Certainly.

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1483. The site becoming valuable from that cause, would there be any inducement to close the slaughter-houses?—No.

1484. Therefore the law would not adopt any means for closing existing slaughter-houses, but would only prevent new ones?—I think that would not be a proper or practical way to deal with the question.

1485. Your opinion is in favour of doing away with them altogether?—No, I am in favour of allowing them to continue under inspection; should the inspection not be sufficient, you might then resort to compulsory slaughter-houses.

1486. Do you think the removal of Smithfield would drive little butchers out of the market?—My opinion is decidedly the contrary. I think the doing away with private slaughter-houses might drive little butchers out of the live market; but giving them a good market instead of a bad one would be giving them a benefit,—a very great benefit.

1487. I will put the case of a retail butcher living in Jermyn-street; his business is to sell certain vendible parts of the carcass. Is it, according to your experience, more expensive for him to have, as he now does, the live beast driven to his retail shop in Jermyn-street, or to his contiguous slaughter-house and slaughtered and prepared there; or would it be cheaper for him to receive it in the shape only of the vendible parts of the carcass, the slaughtering having taken place at the live market at a distance?—I do not think the difference in expense would be material; I think it would be more a question of convenience than expense.

1488. Supposing the slaughter-houses within a mile and a half of the metropolis to be well regulated, and to be so constructed as to allow the beasts that are to be slaughtered the advantage of lairs and all other conveniences of that kind, do you think it would be essential for the retail butcher in town in hot weather to have a slaughter-house close to his place of trade?—Perhaps as a matter of convenience it would; but I think the butcher would find it to his advantage to slaughter in a general way out of town, although I am aware that in giving this opinion I am at issue with the trade; but still I maintain that the meat would be so much better that the butchers would change their present opinion. Some Newgate market butchers now slaughter their calves at Romford, and their beasts at St. George's Fields, in the Borough.

1489. It is urged in favour of slaughter-houses being attached to the places of sale in town, that in hot weather it is absolutely necessary to have them so attached in order that they may slaughter the sheep and cattle immediately?—I consider it more a matter of convenience than anything else; a slaughter-house on the premises might be an occasional advantage in hot weather. I am an advocate for slaughtering out of town. I think a great many butchers would do that if they are allowed to keep their own slaughter-houses.

1490. A statement before the Committee of the House of Commons in 1849 is to the following effect:—"Every arrangement which produces over-driving, irritation, terror, and torment to the beasts before the final blow is struck, deteriorates in the same degree the qualities of their flesh as human food, and especially its property of resisting decomposition;" do you consider that a theoretical statement, or does it accord with your experience?—It is decidedly practical, and accords with my experience, having been connected with graziers and butchers in the country for upwards of 40 years; have no hesitation whatever in coming to this conclusion.

1491. Do you think the business of slaughtering cattle in the country will increase?—I think it would not increase if a good market with proper conveniences were established here.

1492. You think the establishment of an improved Smithfield market would obviate the necessity of killing in the country?—Yes, I think it would to some extent. There is an advantage in slaughtering in and near London, the offals making more than in the country.

1493. There are many businesses which are established in connexion with slaughter houses, are there not, such as boiling, &c.?—Yes, there are a variety of trades connected with the slaughtering, which are greater nuisances than the slaughtering itself.

1494. Would it be necessary in purchasing ground for the purposes of a large cattle market to buy land upon which those businesses could be carried on?—It would be very desirable to have sufficient space; this would, however, depend more upon the removal of the slaughter-houses than the market.

1495. Would not the existence of those businesses be an injury to the public?—Not if properly regulated. They are now carried on in the lowest and most confined neighbourhoods, which makes them a much greater nuisance.

1496. If you had sufficient space near the new prison, the requisite buildings might be erected for the purpose there, and without creating any annoyance to the neighbourhood?—Yes, I think it could; and wherever the market is there must be provision made for slaughtering and those trades which would necessarily follow.

1497. To provide houses for all these businesses you would require a very large space?—I think that 40 or 50 acres of land would be sufficient; the quantity of space required would, however, depend upon the removal of the slaughter-houses.

1498. Do you think it desirable that the slaughter-houses should not be done away with?—I should rather have them left under proper regulations.

1499. You wish, in order to conciliate the trade, that they should remain?—Yes. There is a large sum of money embarked in the slaughter-houses, and, therefore, if the doing away with them could be avoided, I think it would be desirable.

1500. You have said that if private slaughtering is allowed to remain, there should, in your opinion, be no driving through the streets in the day time; what hours do you mean by the day time?—I should say that they should not drive through the streets of London after nine o'clock in the morning, or before seven or eight o'clock in the evening.

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1501. You would have the market over before six o'clock?—I would have it over by three or four o'clock.

1502. Is it absolutely necessary, in the summer time, that the slaughter-houses for lambs should be near the butcher's shop?—I think it is not absolutely necessary, but it is a matter of convenience to the butcher, who might sometimes find it necessary to kill lambs late at night in the summer time.

1503. That which is decidedly convenient to the trade would ultimately, would it not, be as beneficial to the public?—Decidedly. I think the public are obliged to be the payers at last. If you interfere with the interests of the butchers and injure them, the public must suffer from it.

[The Witness withdrew.]

Adjourned to Wednesday next at 12 o'clock.

January 16, 1850.

W. Shaw, Esq.,
J. T. Tidd, Esq.,
W. Armstrong, Esq.,
R. Grantham,
Esq., C.E.

WEDNESDAY, January 16, 1850.

GEORGE CORNEWALL LEWIS, Esq., M.P., in the Chair.

William Shaw, Esq., Chairman of the Islington Market Company.

John T. Tidd, Esq., Secretary to the Company.

William Mathew Armstrong, Esq., Solicitor to the Company.

R. B. Grantham, Esq., Engineer to the Company, examined.

1504. (To Mr. Shaw.) Do you represent the present proprietors of Islington market?—No. The parties I represent have a conditional contract with the present proprietor for the purchase of the market.

1505. Who is the present proprietor of the market?—Mr Westbrook.

1506. How did he acquire his interest?—By purchase from the representatives of the late Mr. Perkins.

1507. In what relation do the chairman and directors stand to the present proprietor of the market?—In the position of having a conditional contract with him for the purchase of the market.

1508. Have they the management of the market?—Not at the present moment; not till the contract is completed.

1509. Then, at present, are the Commissioners to understand that all active proceedings with respect to the market are in abeyance?—Yes, as to its being used as a market.

1510. Will you be good enough to state the conditions upon which the present directors have agreed with Mr. Westbrook?—It is a purchase of the market—the whole property at a certain sum—to be completed on the 25th of March, or at any period sooner, that they may be disposed.

1511. Then it is an absolute purchase; not a conditional one?—Yes. I used the term "conditional" for this reason, that under the Registration Act, we are not at present in a condition to make anything but a conditional purchase till the company is matured.

1512. But the contract is complete?—It is.

1513. And you consider yourselves virtually as the proprietors of the market?—Yes.

1514. Without the agreement being affected by any contingency with reference to Smithfield or any other market?—Not at all.

1515. Are you prepared to state to the Commissioners what your views are with respect to the disposal or management of the market?—I was not aware of the information that would be required; but I presumed it was to give any information in our power respecting the property, its capabilities, and so on. So far as regards its management, I apprehend that at present we can only look at the terms of our Act of Parliament; its management must be controlled by that Act. Further than that, we cannot at present go, and it would be useless for us at present to speculate upon the course of management that should be adopted, supposing the market were established there, because I assume that it would be placed under some public regulations independently of the control of the owners.

1516. What is the extent of the Islington market?—It is $29\frac{1}{2}$ acres altogether; 15 of which are within the walls.

1517. Is the whole of that your property?—Yes; our property is $29\frac{1}{2}$ acres. [A plan of the market and the property was produced.] On one side there is a piece of ground of seven acres and a quarter, belonging to a person of the name of Ambler, which may be purchased; and upon the other side there are 10 acres which may also be purchased if required; so that, in point of fact, there may be $17\frac{1}{2}$ acres added to the $29\frac{1}{2}$ acres which we have already got. I am not speaking speculatively upon this subject, because we have been in communication with a party acting for Mr. Scott, and we know from him that we can have any portion of that ground; and we have the approval of Mr. Richard Benyon De Beauvoir, whose property lies on the east side.

1518. What is the total area belonging to the company?—The total area belonging to the company is $29\frac{1}{2}$ acres; the area of the market is 15 acres within the walls.

1519. Have you any objection to state what is the purchase money?—I do not know that I have any objection to state it; it is 105,000*l*.

1520. Does that include everything?—Everything.

1521. Will you proceed to state what you consider to be the advantages of the proposed

Islington market, with reference to its site?—Looking at the necessity of having a market as near as you can to the metropolis, without its becoming a nuisance from the inconvenience of the traffic through the streets, I think the site is peculiarly eligible from it being just upon the confines of the metropolis where it does not interfere with any populous locality; and that it is more eligible than a more distant spot would be, because, after you have attained the point of getting far enough out to get rid of the inconvenience to the public, the next object should be to take care not to occasion inconvenience to the trade, and also to have it as near as possible to a railway, where the stock can be delivered as closely as possible to the market without having far to travel.

1522. How does it stand with reference to the termini of the principal railways?—The extreme point of the market is within 320 yards of the East and West India Docks and Birmingham Junction Railway; and it is 590 yards to the north-east entrance of the market; it is 320 yards from the Junction Railway which unites the Eastern Counties, the Great Northern, and the London and North Western Railways. With respect to a station, there is a station at present being made for general purposes, not directly opposite this part of the property; but there is a tract of land uncovered between the land which joins the market property and the railway, of 16½ acres on this side the railway, and 18½ acres on the other side the railway. And, supposing the market were established at Islington, the station for landing cattle would be 270 or 280 yards from the nearest point to the market; or if the 16½ acres of land above-named were purchased the cattle would not be driven along any public road.

1523. With what railways will that line communicate?—The Eastern Counties, the Great Northern, and the London and North Western, at present. It is contemplated (but of course that is at present a speculation) either to extend it to the Great Western, or for the Great Western to make some arrangement for coming further into the metropolis, so that they may have greater convenience for delivering their goods and cattle. Hence, we expect that the Great Western will be united in some way with this line.

1524. What great roads have you communicating with the market?—There is the road on the eastern side, the Southgate-road, which extends into the City, and which has no toll whatever. In fact we have no toll to interfere with us.

1525. How would the foreign cattle come to Islington market?—That would depend entirely upon whether any arrangement should be made for that, which has been thought by many persons very desirable, namely that the foreign cattle should be kept separate. If the foreign cattle are to come to Islington to be sold in the market, or if they were to be sold in a separate market adjoining the Islington market, in either case they would come from the Thames along the Junction railway.

1526. With respect to the drainage of the market and its level, what do you say?—As to the drainage, I apprehend there cannot be a question, for this reason, that it is on an extensive bed of gravel. We have ascertained by a pit that is open there for digging gravel which is 20 feet deep, that it does not gather water, therefore the site of the market is rather like a cullender than anything else, as to its capability of drainage. But besides that there is a main sewer about 200 feet from the market and 18½ below it, a main sewer of the first class, laid down by the Commissioners, which runs into the Thames at London bridge.

1527. Has not the surface of the soil been removed, so that the level is under that of the neighbouring ground?—From the Lower-road of Islington it has that appearance; but when you are in the market, or if you come there from either of the other sides you find that it is upon a level. There is a little fall from the Lower-road of Islington; but it is upon a level with all the surrounding land except upon that side. The soil having been taken out I consider to be a great advantage, because the clay, which would have been a very bad foundation for such a purpose, has been removed. If the clay had been still there, it would not only have been bad as a foundation, but also it would have added extremely to the expense of the land, so that the taking away the clay, I hold to be an advantage rather than a disadvantage.

1528. Is there any means of draining towards the north; does not the ground gradually rise towards the north?—I do not know; but at all events there is a fall to the south. I may add, with respect to the drainage, that of course in these days of agricultural improvement, nothing would be allowed to go into the drains except surface-water, and anything that could not be saved, arrangements would be made for the preservation of everything in the shape of offal and matters available for manure.

1529. Have you any abattoirs there?—We have no abattoirs; but this plan has been laid down by Mr. Grantham to show that supposing this part of the land (the land without the walls on the eastern side) were not wanted for any other purpose, abattoirs might be erected upon this part of the property.

1530. Is there any provision for stallage or lairage for the cattle?—At present there is lairage in the outer part of the market under the walls all the way round, and the cattle-pens are in the centre; but I apprehend, that in order to make it quite equal to the demand for room, the whole market would be devoted, or nearly so, to standing the cattle for sale; consequently lairage must be had adjoining, and hence I mentioned the vacant spot of land, about 16 acres, by the side of the railway, with no buildings upon it excepting a small house. So that there would be no difficulty in getting land for lairs immediately adjoining the railway.

1531. Do you contemplate that a single live stock market at Islington, would be sufficient for the wants of the metropolis, without any market on the southern side of the river?—I should be rather guided in that by what appeared to be the collective opinions of almost all the witnesses examined before the last Committee of the House of Commons, consisting of men in every branch of business connected with the market, salesmen, butchers, and graziers, and they all appeared to agree that one market only would be most desirable. There seemed to be very little difference of opinion upon that head. But it might by possibility be desirable to have

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a smaller market on the south side of the metropolis. I myself confess that seeing that the parties directly interested in the subject are so-unanimous upon the point of having only one market, I should not venture to set up my opinion against theirs. I should rather go for a single market.

1532. Do you apprehend that 36 acres in that case would be sufficient in extent for the supply of this metropolis, including the lairage as well as the market?—I should not think that 36 acres would. But we have $46\frac{1}{2}$ acres, without intrenching upon the land next the railway. There are $29\frac{1}{2}$ which we now possess, and $7\frac{1}{2}$ acres on one side and 10 acres on the other side, both immediately adjoining the property, making $46\frac{1}{2}$ within a ring fence.

1533. Do you think it desirable that a large dead-meat market should be in the neighbourhood of the live-stock market?—I think there should be facility afforded. I think that provided the tendency of the trade was to require such accommodation, it should be provided. That would, in some measure, depend upon the extent of the market, and in some measure upon any provision made in other parts of the metropolis for a dead-meat market.

1534. You are aware that it would be very inconvenient to the public to come to Islington, to the dead-meat market?—I did not apprehend that the question meant a retail market. If it meant a retail market, I should say that there is very little chance of a retail market being established at Islington, to any extent. I meant simply, that provision should be made for the convenience of the large carcass butchers, for slaughtering near the spot if they thought fit, and also, perhaps, in conformity with any regulations which might be laid down, there should be accommodation that the retail butchers should be enabled to purchase their meat at a wholesale market upon the spot, as they do now at Newgate market.

1535. Has your attention been called to the compensation clauses in the Islington Market Act?—It has.

1536. Would not those clauses materially diminish the profits of the proprietors of Islington market, in case it were used to any extent?—I think, that if I construe that clause rightly, although it is involved in some obscurity, the effect of it is this, that if through the removal of Smithfield, the Corporation of London are enabled to make an advantageous use of the area of Smithfield market, then the contribution which was to be paid by the proprietor of Islington market to the City would cease. And if that be the right view of the subject, I do not think that there would be any diminution of the profits. In fact, I should say that the Islington market proprietors would be too happy to take the area of Smithfield market, and to pay annually to the Corporation all that they have ever received or could receive, as profit, out of Smithfield market.

1537. If any diminution should take place in the tolls, rents, dues, and profits arising from the market of Smithfield, in consequence of the use of Islington market, is not the proprietor of Islington market bound to compensate the city for that amount of loss?—I think he is, by a clause in the Act. But what was then contemplated, experience has shown could not be effected. I believe Mr. Perkins' idea was, that he should be able to establish a market at Islington in spite of Smithfield market. It was to be a race of competition between the two. That clause was intended to meet that case; experience has shown that that is impossible. I cannot conceive that Islington market will ever succeed unless Smithfield market be removed.

1538. Has any attempt been made to open Islington market for the use of the public?—It was opened in 1836 or 1837, and great exertions were made to support it. Many landed proprietors and farmers gave peremptory orders to their salesmen to sell their cattle at Islington market. But it was found that the united strength of the parties interested in Smithfield market was too great, and therefore it was abandoned. Another attempt was again made lately, but I considered it an ill-advised attempt, because I never entertained the opinion for a moment that it could be successful.

1539. Is it the intention of the proprietors of Islington market, to make a regular dead-meat market, in connexion with the live-meat market, at Islington?—They will make provision for a dead-meat market.

1540. As well as slaughter-houses?—Yes. What I meant to convey in my previous observations was this, that I think the principle they would act upon would be that of providing accommodation for the public, supposing they choose to take advantage of it, but not attempting anything compulsory.

1541. Then at present, you have no intention of erecting a dead-meat market?—Certainly, we shall not ourselves erect a dead-meat market at present.

1542. You do not think that a dead-meat market is a necessary appendage to a great live-stock market?—I think it would be exceedingly desirable to have a wholesale dead-meat market near the live-stock market.

1543. How near?—As near as you can, conveniently.

1544. Is it the fact that those who attend Smithfield market also attend Newgate market?—Yes.

1545. Is it desirable for the interests of the butchers that they should be able to go with facility from the one to the other?—I think it is.

1546. Is it also desirable for the interests of the graziers, that they should be able to go readily from the one to the other?—Consequently, I should say, it is because I think every impediment thrown in the way of the trade must eventually affect both the consumer and the producer.

1547. You stated your opinion conditionally, with regard to there being another market established on the south of London. How many markets in the week do you contemplate being held at Islington?—Two in a week.

1548. On what days?—That is a point to be settled; but I think the popular opinion is, that Tuesday would be better than Monday. Tuesday and Friday.

1549. What is the precise distance of Islington market from Smithfield?—It is exactly two miles, as the crow flies.

1550. Do you know how long it would take to drive a carriage or a cart from Smithfield, or from St. Paul's, to Islington market?—It is two miles and a half by the road. You generally reckon that a cart, if it goes at an ordinary common pace, would be three-quarters of an hour in going that distance. But, if you speak of a butcher's cart, or of the style in which Chaplin and carriers now carry their goods, it would not take, I should say, twenty minutes.

1551. Are the thoroughfares open, and tolerably wide?—Yes; in illustration of this the new street at the north end of Farringdon-street may be mentioned.

1552. Is there any other circumstance which you wish to state with respect to the advantages of the market?—With respect to the main point, which I apprehend is the accommodation of the cattle, inasmuch as we show that independently of the capability of the market as it now stands, we have the means of adding to it any reasonable extent that can be desired, I consider that as far as the standing of cattle goes, we succeed in showing that it is amply sufficient for everything that can be wanted. Supposing the lairs which are now used as lairs, and of course are equally capable of being used as pens for sale, were to be so employed, and the whole area of the market given up to market purposes for cattle and sheep, the market would accommodate over 7,000 bullocks, and within a fraction of 40,000 sheep. Then something would depend with respect to its capability for many years to come upon the decision which might be come to with respect to foreign cattle. That I consider of great importance, for many reasons, irrespective of the market. In an agricultural point of view, it is an important ingredient in this question. But supposing it should be determined to have a market for foreign stock, adjoining this market, then of course, comparing the number now exhibited in Smithfield with the 7,000 bullocks which could be accommodated in this market, it would be sufficient for many years to come, without enlarging it. But supposing it were thought desirable to provide greater accommodation at starting, there could be no difficulty in extending it on either side, so as to accommodate any number of cattle and sheep that might be required.

1553. Would the chief object of a foreign market be to have a quarantine market for foreign sheep?—That is one object.

1554. Is there any other object?—I should say for myself, from the information which I have collected, with respect to the mode in which business is conducted in Smithfield market (without wishing to cast any reflection upon individuals), it would be exceedingly desirable that persons who are extensive purchasers of foreign stock, and consignees of foreign stock, should not have them side by side and sell them conjointly with English cattle. I know that, practically, inconvenience and loss result from it, and I think that would be in some measure remedied, without inconveniencing the trade, if the foreign cattle were sold in a separate market.

1555. If foreign sheep are subject to a small-pox disease, which is contagious, that would be a reason for keeping a separate quarantine market for them?—Certainly.

1556. How would that reason apply to cattle. Are they subject to any contagious disease?—They are; they are subject to a foot and mouth disease, which although not very fatal in its consequences, is very prejudicial, because it impairs the strength of the animal, and weakens it for a great length of time, and with fattening cattle especially, occasions very considerable loss. We know that the disease has been brought over from the continent. We have it here, it is true, but it is constantly appearing in imported animals, and there are those who go so far as to say that another very fatal disease—pleura pneumonia—is also brought in by foreign cattle. Another reason for having a separate market for them might be this:—I apprehend that the intention of the Legislature in admitting foreign stock into this country was for the purpose of increasing the supply of food for the people. Now we know enough of our own agriculture to be aware that our stock cannot be improved, as regards its breed, by foreign breeding cattle. If, therefore, it is desirable only to import them as food, I think we should avoid as much as possible running any risks of extending disease which we know has been very fatal in this country; and it would be exceedingly desirable that cattle so imported should be made use of as food, and that they should be allowed to be sent into the country, or to be dispersed in the country as little as possible, if at all.

1557. You limit the separation to quarantine purposes. You would not wish to place foreign cattle in a situation of inferiority in the market upon any other ground?—Upon no other ground.

1558. Is any part of the ground, now the property of the Company, built upon?—No; but a portion of the plan is laid down to represent abattoirs or slaughter-houses which may be erected.*

1559. What is the descent from the Islington-road into the market. How far is it below the level of the Islington-road?

Mr. Grantham. I think it is about eight or nine feet below.

1560. (*To Mr. Shaw.*) With respect to foreign cattle having a separate station, do you think that any fraud or injustice is committed upon the English grazier by the proximity of the foreign and British cattle, and the necessity of sale to which you refer?—Yes, I consider there is.

1561. In what way does it arise?—It is well known that salesmen in Smithfield market are themselves extremely large purchasers and consignees of foreign cattle; and it is also well known that whether as regards foreign or home cattle, it is almost essentially necessary, when they once come into Smithfield, that they should be sold; hence the consignees feel it important to sell the foreign cattle consigned to them, or that they have purchased, if possible, and I feel a

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* This answer was given from the impression that the question had reference to the outlines for abattoirs set out upon the plan produced. There are 36 houses, large and small, erected on the property.

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conviction (although I have no positive evidence of it), from all I have collected, that the foreign cattle do obtain in that way a preference in sale as compared with English cattle, *pari passu*, in the hands of the same parties.

1562. Do you consider that the statement which you have just made, with respect to the advantages obtained by foreign cattle in Smithfield market rests upon good evidence?—I do.

1563. It is a matter you have considered a good deal before?—It is.

1564. Have you any objection to state your authorities, or can you mention any party who, as a salesman, has done it?—I should like to inquire so as to be able to do so correctly. I shall willingly do so. I apprehend there is no doubt about the salesmen being the consignees of foreign stock, whatever dispute there may be as to their being purchasers themselves. Captain Carr, who has been residing in Holstein many years, wrote to me eight or nine months ago, to request me to recommend some party to whom he should consign some foreign beasts for sale, and I did so name a party; and I have reason to believe, although I am not prepared to state the fact, that he did afterwards consign stock to that party for sale.

1565. Do not you think that the jealousy with regard to foreign importations, is likely to create some unjust suspicions as to a preference being shown in the sale?—I think that is possible; but assuming that my proposition is correct, I think it follows almost as a natural consequence that people will entertain such suspicions. If a salesman has purchased stock himself, and at the same time is selling English stock on commission, it is a very natural conclusion for the owner of the English stock to arrive at, that where a man is filling two capacities as the owner of one lot of stock, and the salesman of another lot of stock, he will naturally give the advantage to his own stock.

1566. You are aware that the position of Islington market may be said to be at the north-east corner of the metropolis?—I should say not; it is rather at the north.

1567. Do not you think that the difficulty would be increased, of sending cattle through the streets from there?—Certainly not.

1568. By what routes would you send them?—If you have a central market at Smithfield, you have to drive the cattle through the streets in, and you have to drive them out, and you must drive them out immediately. If you have a market situated anywhere near the railway termini, you avoid the necessity of driving them through the streets to get them into the market.

1569. What do you do with Southdown stock?—The Southdown stock do not come from the Southdowns to Smithfield; the Southdowns are bred in Sussex and fatted elsewhere; 95 per cent. of the Southdowns bred in Sussex, are fatted in other parts of the kingdom. If you had your market at Islington, the cattle would not go through the streets at all in coming to the market, and there would not be the necessity for their being driven away immediately that there is now, because there would be ample accommodation. I presume that regulations would be made, so that they would be driven through the streets at particular hours only; there would be convenience for their accommodation upon the spot, if it was necessary that they should be so accommodated, and if they should remain there 12 or 14 hours, it would be a matter of no consequence.

1570. You consider that the convenience would be in changing the hours of driving the cattle?—Accompanied with the accommodation of lairage on the spot.

1571. Within what hours should you say?—I should fix some hour in the morning, after which they should not be allowed to go through the streets; I should say not after 6 o'clock in the morning, and not before 9 at night.

1572. You consider that an extramural cattle-market would greatly diminish the nuisance of driving live cattle through the streets, by preventing in a very great degree any driving of live stock through the streets in coming to market?—Yes.

1573. And with respect to the practice of driving live stock through the streets in going from the market to places of sale within the City, the continuance or discontinuance of that would depend upon what experience might teach, as to whether it is cheaper for the retail butcher to have the entire live animal brought to his place of sale, or only that part of the carcass of the animal which he intends to sell; but if that practice should be diminished, is that another advantage which you contemplate?—That would depend upon a very important question, which you can scarcely enter into without determining what shall be the course pursued with respect to slaughtering within the City generally. At present I can scarcely imagine the immediate adoption of a compulsory regulation to slaughter cattle outside the walls entirely.

1574. You do not think it would be advantageous to the public?—I cannot see my way in it clearly at present.

1575. Are you aware what proportion of the sheep and cattle go across Blackfriars Bridge after sale at Smithfield?—I cannot speak of my own knowledge, but I think according to the evidence that has been given on the subject, it has been said from a third to a fourth.

1576. Do you know what proportion come to Smithfield from the south side of the river?—I only depend upon the same sort of information for an answer to that question. It has been stated to be about a ninth or a tenth. With respect to animals going over to the Borough, there are very large slaughter-houses in the Borough, and I am informed that many animals are sent over there to be slaughtered, and the carcasses are brought back again. There are also very large slaughter-houses in St. George's Fields, and the animals are slaughtered there and brought back again over the bridges.

1577. Are you certain that that is the fact?—I am certain that that is the case.

1578. How many entrances are there for cattle at Islington market?—There are six at present; but these can be arranged in any way, and increased to any requisite number.

1579. What roads do they communicate with?—On one side with the Southgate-road, and on the other side with a private road on the south side of the property, which leads from the

Lower-road, Islington, into the Southgate-road; and there is the Lower-road, Islington, on the other side: there are good roads on three sides.

1580. Are there not many businesses which are necessarily established near Newgate market?—There are.

1581. Would there be room for the establishment of those businesses near your cattle market, supposing it were the exclusive cattle market of London?—There can be no doubt of it from the statement I have made respecting the land. I apprehend the question does not go to the adoption of the foreign system, the compulsory establishment of abattoirs and buildings for other trades, but merely the affording them the accommodation of land if they choose to avail themselves of it, through the circumstance of the market being there. That is amply provided for by upwards of 35 acres of land adjoining the railway, which is irrespective of the 46½ acres embracing the market and land contiguous; in the whole 81½ acres.

1582. Provided this were established as a live-meat market, should you as proprietors of the market be at all concerned in what became of the cattle after they were sold and driven out of the market, whether or not they were driven through the streets of London to be slaughtered at intermural slaughter-houses?—Speaking abstractedly, it can matter nothing to the proprietors of the market what becomes of them afterwards. But I should say, that the proprietors of the market would be anxious to carry out every arrangement calculated to amend the whole system. But, of course, we are in the dark at present as to what is required, beyond the mere finding a sufficient space for the market.

1583. Is there any other observation that you wish to make to the Commissioners?—I am not aware that there is. I will only observe, that irrespective of the accommodation now provided in the market itself, there is ample means of enlarging it to any further extent that can possibly be required. It now will hold 7,000 bullocks, and within a fraction of 40,000 sheep.

1584. Do you know the quantity of foreign stock that generally comes into Smithfield market?—The average of foreign cattle exhibited for sale in Smithfield market last year, week by week, was nearly 600; sheep, I think, averaging about 2,200.

1585. That is, both Monday and Friday?—Yes; there is another observation I wish to make (though perhaps it is unnecessary), that the parties interested in the Islington market feel an earnest desire to make every arrangement that may be required, and are perfectly prepared to comply with any rules or regulations which it may be deemed expedient for the good management of a metropolitan market, and that personally and individually, they have no desire in the slightest degree to come into collision with any parties interested in the subject; they are anxious rather to seek the co-operation of all parties, in carrying out that which they consider an important public object.

[The Witness withdrew.]

Mr. Alexander Fraser examined.

Mr. A. Fraser.

1586. You are steward to Sir Harry Verney?—Yes.

1587. Where do you reside?—At Claydon in Buckinghamshire.

1588. Are you well acquainted with the cattle trade between Buckinghamshire and the Metropolis?—Yes, I have a considerable knowledge of the trade.

1589. In what way are cattle sent up to Smithfield?—They are sent up in two ways: sometimes they are travelled up, and sometimes they are sent up by railway, according to the desire of the party sending. We can do either.

1590. Does it depend upon the state of the animals, as to whether they are fat or not?—We generally prefer to send animals which are stall fed by railway, but grass-fed beasts travel about as well, I think.

1591. Are you acquainted with the opinions of many of the graziers in Buckinghamshire with respect to the accommodation for cattle in Smithfield?—Yes, I know the opinions of several large graziers in our neighbourhood.

1592. Are they satisfied with the manner in which their beasts are sold at Smithfield?—No; they complain very much of the want of accommodation in Smithfield, and the treatment which the cattle receive in getting there.

1593. Do you mean on their road, or at the lairs, or from cruelty at Smithfield?—I think chiefly in going from the lairs into Smithfield. But one great cause of complaint is, that we are obliged to have the stock in the lairs from Saturday night to Monday morning; and stock coming out of the country, either by railway or travelling, are perhaps off their feet in a great measure. They do not feed well, and the expense of the Sunday is lost, and the cattle are in worse condition than they would be if they could be walked into the market at once, instead of remaining there all Sunday, at the expense of the grazier, and losing condition.

1594. You think it would be better to change the market-day?—Yes, that is the general opinion.

1595. The grazier apprehends that, in consequence of that, he loses considerably in the sale of his beast?—Yes.

1596. You think Tuesday would be a better day for the market?—Any day on which the cattle could be brought up from the country and delivered at once at the market. I think Tuesday would be perhaps the best day.

1597. Is there any objection to Smithfield market which the Buckinghamshire graziers make, which would not be obviated by a change of the day?—They object to it in this way: that the lairs are so far from the market now, that in case of a bad market (and we have them very often) the salesman, or the grazier himself, is obliged to sell his stock at whatever he is

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bid for them, because if they are taken back from Smithfield market to the lairs, and are brought back another day, they are deteriorated so much that he does not get the price for them again, consequently that is rarely ever done; and the reason is, that people are afraid to drive them back from Smithfield to the present lairs, and then to bring them back again to Smithfield. They have to stand for many hours upon the stones, and then they are walked back to the lairs, and consequently they do not feed well for two or three days. Sheep are also very much deteriorated in the same way.

1598. Would they prefer a market on the northern side of the Metropolis to Smithfield?—I believe they would.

1599. Are you able to state what you consider to be the amount of loss upon the beasts that are sent up to the market?—It would be very difficult to state any sum as the loss, because some beasts lose more than others, according to the state of fatness and the constitution of the animal. In the case of stall-fed beasts, it would not be going too far to say that the loss is equal to 1*l.* a head, or perhaps 30*s.* occasionally, and sometimes even more than that. But that would not hold good generally.

1600. Do you believe that, under any circumstances, it would be for the interest of the grazier to sell his cattle in the metropolitan cattle market without the intervention of a salesman?—I believe it would, provided he had room enough.

1601. Is it your impression that the present arrangement of Smithfield market renders it difficult for the grazier to dispense with the assistance of the salesman?—It is; for in Smithfield on a full market day it is scarcely possible for a person to move along; the beasts, especially the ring droves, get so close together that no person, except he is accustomed to the market every day, can have any chance of doing justice to himself; his beast cannot be seen or handled satisfactorily.

1602. Are you aware that the London butchers seem to think, that under any circumstances the country grazier would not be likely to get such good prices for his cattle in the London market as a salesman would do?—No, I am not. I know some instances where it has not been so. I know some who sell their beasts regularly themselves who get better prices than we get from a salesman.

1603. Did you ever hear of such a thing as a salesman being employed intermediately between the grazier and the purchaser in any country cattle market?—Not in my experience. I never knew a case.

1604. Did you ever attend Smithfield while the market was going on?—Yes.

1605. Have you ever attended cattle markets in the country?—Yes.

1606. What difference have you observed as regards the pressure of the animals?—In a country market I have never seen a case where you could not go round the beasts and quietly single them out one by one, and examine them all over with the greatest ease. But in Smithfield on a full market day, it is impossible to do that; you can scarcely walk along between the droves; the ring droves are so close that you cannot touch the beasts except at one or two points, and you cannot see above half of the beast. But in the country, on the other hand, we can single a lot out and give them as much room as we please without any inconvenience whatever. We never buy beasts in the country without seeing them turned out. Now here we have no room to exhibit them, and, in fact, the grazier is very much at the mercy of the butcher.

1607. Do you think that if the space were increased, so as to admit of proper examination of the beasts, the grazier would come up to London to sell his beasts himself?—I believe he would; at least, in many cases.

1608. Many that do not now you think would then come up to sell their own beasts?—Yes.

1609. Is any dead meat sent up from Buckinghamshire to Newgate market?—There is, but not a great deal.

1610. Is it sent up by butchers?—In some instances; but in many cases the farmers themselves kill and send up small porkers, but not beef or mutton.

1611. Are the farmers likely to find it their interest to send up dead meat rather than live stock?—I do not think so. I think the butchers who send up dead meat from the country are those who get overstocked and send the surplus to London—a few of the best joints. I do not think they kill in the country on purpose to send up to London. I do not think it would pay them in our neighbourhood.

1612. What size do you think a cattle market for London ought to be?—I think the market itself ought to be a large space, at least twice as large as Smithfield.

1613. Ought there to be lairage close to it?—Yes, the nearer the better.

1614. Within what distance?—Within half a mile; in fact, it would be better if it were nearer.

1615. You would not object to its being close to the market?—No.

1616. If the market consisted of 20 acres, what size should you think would be necessary for lairage?—I do not know that I could answer that. I should think there ought to be 100 acres of open lairs.

[The Witness withdrew.]

Mr. W. Shank.

Mr. William Shank examined.

1617. What office do you hold in connexion with Smithfield market?—I am manager and collector.

1618. By whom were you appointed?—By the Lord Mayor, Aldermen, and Common of the City of London.

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1619. How long have you held the office?—Eight years.

1620. What is your remuneration?—300*l.* a-year, and I have a house to live in free of rent and taxes.

1621. Out of what fund are you paid?—The Markets Committee pay me quarterly by a warrant upon the Chamber of London.

1622. Are you paid out of the general revenues of the City?—No.

1623. Are you paid out of any fund specially arising from the market?—I am paid from the revenues arising from the market.

1624. What are your duties?—In the afternoon previous to each market-day I attend to superintend the arrangements of the market. Each salesman sends me an account of the number of sheep and beasts he has coming, and the accommodation which he requires. I set out the various sites for the salesmen, and the next day I collect the tolls and dues, deliver an account of each sum received weekly; and annually, grant licences to 1,000 drovers, keep the public book for the entry of all hay and straw sold in the market: these are the principal part of my duty.

1625. Will you describe the process of collecting the tolls and dues?—On the Monday morning, and on Friday morning, I go round to the different salesmen or drovers, and I receive an account of the number of beasts and sheep that each salesman has; then I make the list out and go round to their agents. On the day previous I know the extent of rail and the number of pens that I have before I let them out; and I make an account, and go round to the different bankers, take the money for the rails and the pens, and, on the next market-day, I go round and they fill up this paper, stating the number of sheep and beasts that are sold, and put the City tolls against them, and I receive the money for the tolls.

1626. Than, in fact, you charge the tolls according to the quantity of standing-room allotted to each person?—We debit them the charges; the tolls are chargeable only when the cattle are sold.

1627. Whatever money is to be paid, the number of head of cattle and sheep is recorded according to the space assigned to each person?—No, according to the number that are sold the tolls are collected.

1628. How do you know the number sold?—I take the word of the salesman for that.

1629. Can you always rely upon the word of the salesman?—Generally.

1630. What check have you upon him?—The money-takers take the money for the beasts that are sold, and the generality of the salesmen would not like to lay themselves open to their banker. There are a few that endeavour to avoid the tolls, but they are a different description of men from the generality of salesmen.

1631. Do you believe that, by the process that is adopted, you obtain a correct account of the number of animals sold?—Yes; I collect all the tolls, I believe: I am quite satisfied of that, and perhaps more.

1632. Do you take any tolls upon the animals that are unsold?—No, I do not press for any toll, but I believe the salesmen pay for animals unsold; they do not take the trouble to say, "A hundred of them are not sold," or "30 belong to a freeman."

1633. How much is the toll for each bullock?—One penny.

1634. If that bullock is brought in again upon a subsequent day, would he pay another toll?—He does not pay till the bullock is sold.

1635. Supposing one lot of beasts were cleared away, and that in the course of the day another lot belonging to the salesman were brought in, would he pay twice or once?—He would pay toll twice; for every head of cattle that is sold they pay so much a-head; and for every head of cattle that is tied up, they pay so much a-head for ties.

1636. Have you considered whether it is possible materially to shorten the hours of business of the market?—I think you could shorten the hours two hours in the day.

1637. Not more than that?—Not more than that.

1638. When does it begin in the morning?—At daylight.

1639. Will you have the goodness to refer to the account of the number of cattle and sheep sold in the market at Smithfield on each market day, which is printed in the Appendix to the Report of the Committee of the House of Commons in 1847. By whom is that return signed?—By the Chamberlain.

1640. How does the Chamberlain obtain the numbers in that account?—From me.

1641. How do you make out those numbers?—I go to the different salesmen or the drovers on the Monday morning, and I get an account of the number of beasts and sheep that each salesman has, and then I make out a list, and I take it to the different banking-houses, and on the next market day the bankers make any alterations, and correct any errors, and pay me the toll; then I enter them in a book, and make this return to the Chamberlain.

1642. Do those numbers agree with the numbers upon which the toll has been paid?—This is an account of the number of sheep exposed for sale in Smithfield market.

1643. Do you believe that that is a complete account of the cattle and sheep exposed for sale on each market day?—No, I do not.

1644. Why is it not?—Because the salesmen are in the habit of paying toll for more sheep, and giving me an account of a greater number than they really have in the market.

1645. What is the object of that?—To get room; to get an advantage over their neighbours.

1646. Then do you believe that the number of sheep stated in the account is greater than the number actually exposed for sale?—Yes, considerably, I think; I have no doubt of it. It is not so with the cattle, but with the sheep. I believe this to be a correct account of the beasts, but not of the sheep.

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1647. Do you believe that to be an accurate account of the number of beasts sold on each market-day, but that the number of the sheep is greater in the account than in reality?—Yes.

1648. Is the error in the number of sheep constant throughout, that is to say, is the account of the number of sheep correct for the purpose of comparing one period with another?—It is constant throughout every Monday's market-day. There is a regular system of paying for more than they have.

1649. Can you give the Commissioners a correct account to show the difference?—No, I can only guess at it. I should say you may take off at least 4,000 sheep for every Monday's market-day.

1650. What is the toll upon sheep?—Twopence per score.

1661. Does this practice that you have spoken of with regard to sheep arise from want of room in the market?—Formerly it arose from that, but they continue it now from habit. I am getting into a better plan now. I tell them, let me know what number of sheep you have, and the accommodation you require, and I will give you room to pen all your sheep. Last Monday twenty salesmen agreed to that, and then I left every one all the pens they ordered.

1652. You are aware that the number of cattle, as returned by you as exposed for sale in Smithfield, has increased considerably within the last 20 years, but that the number of sheep has been stationary?—The number of cattle has increased; but the number of sheep, I think, has diminished rather than otherwise.

1653. Can you explain the reason why the number of cattle should increase, and the number of sheep should remain stationary?—Yes, the number of cattle has increased in consequence of the large supply from abroad; the number of sheep remains stationary, because I think they are getting more into the habit of sending them dead.

1654. Did not the number of cattle begin to increase before the importations of foreign cattle were considerable?—No, I did not observe any great increase; there was a little, but not very conspicuous.

1655. Do you believe that the supply of native live cattle in Smithfield has not increased in the last 20 years?—Very trifling, I think; it might have increased 300 weekly. We have one-sixth of the supply of beasts from abroad now.

1656. Do you consider that the diminished quantity of sheep is owing at all to the epidemic which prevailed a few years ago?—It may, in a measure.

1657. Why is it preferable to send up mutton dead rather than alive?—I do not know.

1658. In setting out the pens in the market, do you ever hear complaints with respect to the want of room?—Yes, frequently.

1659. At what time of the year are those complaints most frequent?—At all times, but more in the summer than in the winter.

1660. Do they relate more to cattle than to sheep?—They relate more to cattle now.

1661. Do you consider that the accommodation in the market for cattle is sufficient?—No.

1662. To what extent is it insufficient?—I think we require room for about a thousand more beasts.

1663. What space would that require?—About an acre.

1664. How far is it sufficient with respect to sheep?—We have room enough for sheep, I consider.

1665. You would not wish to have any additional space for sheep?—No, I should not; because if they were to erect more pens, unless we had more sheep than we have had the last two or three years, they would be empty nine months in the year. I could occupy 200 or 300 pens more during three months. I should be glad of them in the height of the summer season.

1666. What is the number of sheep that you have upon an average upon a market-day?—I should think the average was about 22,000, or 23,000. Here are 29,000 one Monday's market-day, and 16,000 another.

1667. Is that 29,000, 4,000 more than actually are there?—Very likely 5,000 more; but the 16,000 would be only about 1,500 more.

1668. Do you attribute the increase of dead meat sent up to market to the cruelties exercised to the sheep in the market?—Not at all.

1669. Are you in attendance during Sunday night?—Not after nine o'clock; sometimes I look about the market just to see what is going on, but I have no particular business, because my arrangements are made before nine. I sometimes look about to see if I can see any abuses that want correcting.

[The Witness withdrew.]

Mr. J. Daw.
Mr. W. Santler.

Mr. Joseph Daw and Mr. William Santler examined.

1670. (To Mr. Daw.) Are you the Secretary of the City Commissioners of Sewers?—I am the Principal Clerk of the City Commissioners of Sewers.

1671. What is the Act by which you are empowered?—The City of London Sewers Act of 1848 is the Act under which we are at present empowered.

1672. Are you aware of the steps that have been taken by the City Commissioners of Sewers with respect to the powers in the Act relating to slaughter-houses?—I am.

1673. Are you aware that by that Act all places at the time of the passing of the Act used as slaughter-houses are to be registered?—Yes.

1674. Has that registration taken place?—It has.

1675. What is the number registered?—The aggregate number is 61 in cellars or vaults, and 87 on the ground floor, making a total of 148. January 16, 1850.

1676. Is there any provision in the Act with respect to underground slaughter-houses?—Mr. J. Daw.
There is no particular provision. Mr. W. Sandler.

1677. Have you a list of the slaughter-houses?—I have. [*The same was delivered in and is as follows.*]

CITY OF LONDON SLAUGHTER-HOUSES.

SITUATION.	Site of Slaughter-house.			NAME OF OCCUPIER.
	Ground Floor.	Cellar.	Vault.	
82 Aldersgate-street	1	..	..	James Covell.
169 Ditto	1	..	..	William Hemus.
50 Ditto	1	..	..	James Summerlin.
60 Aldgate	1	..	..	Robert Laurence Lankester.
44 Aldgate, High-street	1	..	..	W. and E. Scales.
77 Ditto	1	..	..	Thomas Hickinbotham.
52 Ditto	1	..	..	Joseph Gardiner.
58 Ditto	1	..	..	George Bullas.
68 Ditto	2	..	..	Nathaniel Nathan.
74 Ditto	1	..	..	Eleanor Woodley.
45 Ditto	1	..	..	James Lathbury.
57 Ditto	1	..	..	Saul Saul.
66 Ditto	1	..	..	— Israel.
67 Ditto	1	..	..	Ditto.
67 Ditto (behind)	1	..	..	— Isaacs.
62 Ditto	1	..	..	Thomas Poynter.
56 Ditto	1	..	..	Abraham Saul.
59 Ditto	1	..	..	William Saul.
51 Ditto	1	..	..	John Silvester.
73 Ditto	1	..	..	Joseph Goulding.
63 Ditto	1	..	..	James Kilby.
48 Ditto	1	..	..	William Brown.
49 Ditto	1	..	..	Ditto.
64 Ditto	1	..	..	— Jutsum.
65 Ditto	1	..	..	Ditto.
53 Ditto	1	..	..	Joseph Goodwin Gardner.
52 Ditto . . . . .	..	1	..	Joseph Gardiner.
68 Ditto . . . . .	..	1	..	Nathaniel Nathan.
46 Ditto	1	1	..	Christopher Gardner.
Bishopsgate-street, Without	1	..	..	Joseph Groves.
28 Bread-street Hill	1	..	..	Henry Robert Wincott.
Beehive-passage	1	..	..	Stubbing and Leaf.
12 Bear-alley	1	..	..	John Fothergill.
11 Ditto	1	..	..	Charles Berridge.
105 Bishopsgate-street	1	..	..	A. Attwell.
12 Broadway, Ludgate-hill . . . . .	..	1	..	Daniel Cockerill.
60 Cannon-street . . . . .	..	1	..	Charles V. Game.
20 Cock-lane . . . . .	..	1	..	Thomas Keates.
22 Clothfair . . . . .	..	1	..	William Backett.
2 Duke's Head-passage, Ivy-lane . . . . .	..	1	..	Benjamin Venables.
Fox and Knot-yard	3	..	..	Thomas Wyld.
70 Fetter-lane	1	..	..	Parker and Todd.
23 Ditto	1	..	..	Cornell Read.
92 Ditto . . . . .	..	1	..	George Comfort.
61 Ditto . . . . .	..	1	..	John Appleton.
117 Fore-street	1	..	..	George Meadway.
100 Ditto	1	..	..	William Beavor.
93 Ditto	1	..	..	Charles Holmes.
26 Ditto	1	..	..	Thomas Johnson.
3 Ditto	1	..	..	Alfred Carter.
Goodman's-yard	1	..	..	J. W. Carter.
Gun-yard, Norton Folgate	1	..	..	Joseph Warmington.
Harrow-alley, Aldgate	1	..	..	Edward Paxman.
Ditto	1	..	..	J. W. Carter.
Ditto	2	..	..	James Kilby.
Ditto . . . . .	..	1	..	Arthur Grainger.
Helmet Court, Wormwood-street	1	..	..	Benjamin Waite.
4 Hosier Lane	1	..	..	Frank Souter.
Half-Moon-passage, Leadenhall-market . . . . .	..	1	..	John Crosa.
9 Jewry Street, Aldgate	1	..	..	George Curtis.
Leadenhall Market . . . . .	..	..	1	Daniel Cork.
Ditto . . . . .	..	1	..	Charles Wright.
6 Ditto . . . . .	..	1	..	Stephen Veale.
Ditto	1	..	Henry Lee and Company.
19 Ditto	1	..	Alexander Smith.
18 Ditto	1	..	Thomas Symonds.

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Mr. J. Daw.
Mr. W. Santler.

SITUATION.	Site of Slaughter-house.			NAME OF OCCUPIER.
	Ground Floor.	Cellar.	Vault.	
12 Newgate Market	1	..	..	Richard Hicks and Son.
5 Ditto	1	..	..	William King.
6 Ditto	1	..	..	G. and J. N. Silverside.
11 Ditto	1	..	..	Elgar Prebble.
10 Ditto	1	..	..	William Collingwood.
27 Ditto	1	1	..	J. T. Mutrie.
30 Ditto	1	..	..	Duckworth and Kennelley.
31 Ditto	2	..	..	Ditto.
26 Ditto	1	..	..	T. A. Horwood.
9 Ditto	1	..	..	George Lee.
29 Ditto	1	..	..	E. B. Bracher.
28 Ditto	1	..	..	Charles Hewer.
17 Ditto	1	1	..	James Daw.
24 Ditto . . . . .	..	1	..	John Swanton.
16 Ditto . . . . .	..	1	..	Charles Burrage.
2 Ditto . . . . .	..	1	..	J. Worster and L. Chandler.
24 Ditto . . . . .	..	1	..	Samuel Matthews.
23 Ditto . . . . .	..	1	..	Joseph Cockrell.
24 Ditto . . . . .	..	2	..	F. W. Firmin.
3 Ditto . . . . .	..	1	..	Elizabeth Stokes.
21 Newgate-street . . . . .	..	1	..	Mary E. Dean and Thomas Hatton.
15 Ditto . . . . .	..	1	..	James Coward.
16 Noble-street . . . . .	..	1	..	Frederic Fisher.
15 Old Change	1	..	..	R. T. Pocklington.
31 Ditto . . . . .	..	1	..	Ditto.
14 Old Fish-street . . . . .	..	1	..	John Kirby.
1 Paved-passage, Newgate market	1	..	..	John Perry.
9 Rose-street	1	..	..	H. R. Carter.
10 Ditto	1	..	..	Hannah Ward.
5 Ditto . . . . .	..	2	..	Ditto.
2 Ditto . . . . .	..	1	..	James Muggeridge.
13 Ditto . . . . .	..	1	..	John Macey.
7 Ditto . . . . .	..	1	..	Thomas Bonser.
3 Ditto . . . . .	..	1	..	Thomas Taylor.
12 Ditto . . . . .	..	1	..	Ditto.
Ditto . . . . .	..	1	..	William Burchnell.
Ram Inn-yard	2	..	..	William Thomas Farey.
37 Skinner-street, Bishopsgate	1	..	..	William Brind.
9 Somerset-street	1	..	..	— Jutsum.
57 Tower-street	1	..	..	Briggs and Son.
11 Tyler's-court . . . . .	..	1	..	Edward Larnier.
3 Ditto . . . . .	..	1	..	Mary Ann Rich.
2 Ditto . . . . .	..	..	1	D. Andrade, jun.
4 Ditto . . . . .	..	..	1	Sarah Hubbard.
23 Ditto . . . . .	..	..	1	J. W. Carr and T. Keats.
19 Ditto . . . . .	..	..	1	John Hill.
7 Ditto . . . . .	..	..	1	D. Andrade, jun.
8 Ditto . . . . .	..	..	1	E. and J. Saul.
5 Tyler's-passage . . . . .	..	..	1	G. Thompson.
6 Ditto . . . . .	..	..	1	Ditto.
212 Upper Thames-street . . . . .	..	1	..	Thomas Watts.
11 Warwick-lane	1	..	..	William Wright.
12 Ditto	1	..	..	James Matthews.
23 Ditto	1	..	..	Henry Stow.
10 Ditto	1	..	..	William Pain.
Ditto	1	..	..	J. Harris and C. Baker.
4 Ditto	1	..	..	Hammond and Mackintosh.
Ditto	1	..	..	G. and J. N. Silverside.
6 Ditto	1	..	..	H. and M. Israel.
7 Ditto . . . . .	..	1	..	Henry Nash.
5 Ditto . . . . .	..	1	..	Daniel Titmouse.
25 Ditto . . . . .	..	1	..	William Trash.
11 Ditto . . . . .	..	1	..	Martha Horwood.
White Hart-street . . . . .	..	1	..	John Osborn.
2 Ditto . . . . .	..	1	..	George Carr.
34 Walbrook	1	..	..	John Lucking.
24 Wormwood-street	1	..	..	Benjamin Waite.
31 Watling-street	1	..	..	Joseph Young.
19 Ditto . . . . .	..	1	..	Joseph Collins.
22 Wormwood-street . . . . .	..	1	..	S. F. Morris.

1678. Have not the Commissioners a power to make rules for the cleanliness and better management of every place used as a slaughter-house?—They have. January 16, 1850.

1679. Have they made such rules?—They have. These are the rules:—

Mr. J. Daw.

Mr. W. Sauter.

Rules and Regulations agreed to by the Commissioners of Sewers of the City of London, for the Management of Slaughter-houses within the said City, Tuesday, the 20th day of February, 1849.

That every place registered as a slaughter-house be required to be made conformable to the following regulations, to the satisfaction of the Commissioners of Sewers of the City of London, within the period of three months from the date of this notice

1. That the same be paved with flag-stones.
2. That the same be effectively drained with an underground drain, properly trapped, and communicating direct with the public sewer, and that a grating be fixed to the drain, the bars to be not more than 3-8ths of an inch apart, so as to prevent offal of an improper kind from being forced through or into the same.
3. That capacious cisterns be fitted up in all slaughter-houses, to afford an ample supply of water for all occasions, and that they be fitted with a self-acting apparatus, or other apparatus, for flushing the drains therefrom.
4. That the same be ventilated to the utmost extent of which they are capable.
5. That all blood and offal be removed from the same at least once a-day throughout the year, and that the same be duly washed and cleansed, upon every occasion, within one hour after slaughtering has ceased.

At a meeting of the Commissioners of Sewers of the City of London, on Tuesday, 27th February, 1849, it is resolved and ordered, that this Court do fix and appoint, that for every case of the non-observance or non-performance of any one of the said rules and regulations, the pecuniary penalty be a sum not exceeding Five Pounds.

JOSEPH DAW, Clerk.

Dated this 27th day of February, 1849.

I should say that, in the first instance, extracts from the Act of Parliament were circulated extensively, so as to give notice to parties interested of the enactments, and subsequently these regulations were made by the Commissioners, and also as extensively circulated, in this form.. [The same were delivered in, and are as follow.]

Abstract from City of London Sewers' Act, 1848, in relation to Slaughter-houses:

Every place used as a slaughter-house is to be registered by the owner or proprietor at the Office of the Commissioners of Sewers at Guildhall, within three months from the commencement of the Act, under a penalty in default of £5.

In case any such slaughter-house shall be discontinued, the same shall not again be used as such without having been first duly registered, under a penalty of £5.

And for every day after the first upon which the said offence shall be continued, £5.

No place shall be used or occupied as a slaughter-house which shall not have been so used previously to the passing of this Act; and in case any person shall use as a slaughter-house any place not heretofore used as such, every person so offending shall forfeit £5.

And for every day after the first on which such offence shall be committed £5.

The Commissioners may make such rules and regulations as to them shall seem proper for the preservation of cleanliness in, and the management of, every place used as a slaughter-house, under penalties, not to exceed for any offence against such rules, of £5.

Any magistrate may suspend the slaughtering of cattle, &c., in any slaughter-house, the owner or proprietor of which shall offend against any such regulations or this Act, for a period of two months, in addition to aforesaid penalties, and may also, on a repetition of the offence, absolutely prohibit the slaughtering or killing of cattle therein.

Published by order of the Commissioners of Sewers of the City of London.

JOSEPH DAW, Principal Clerk.

Sewers' Office, Guildhall, November, 1848.

N.B.—The Act comes into operation on the 1st day of January, 1849.

1680. Have the Commissioners made any regulations for the suppression of subterranean slaughter-houses?—They contemplated doing so, and took counsel's opinion upon the question whether they had power under the Act of Parliament to enforce the suppression of subterranean slaughter-houses, and they were distinctly advised by the Attorney-General and Mr. Turner that they could not do so under the existing Act.

1681. That opinion was asked for under the terms in the Act?—It was.

1682. Is it the opinion of the Commissioners that it would be desirable that all underground slaughtering should be put an end to?—I think I am justified in saying that that is their opinion.

1683. Have you yourself inspected any of those underground slaughter-houses?—I have.

1684. Will you favour the Commissioners with your opinion of them from your own inspection?—Such as I have seen certainly seemed to me to be very objectionable, from their situation, as well as from the difficulty of access, of ventilating and lighting them properly and effectively, it seemed to be almost impossible that they should be well arranged for the purposes of slaughtering; I cannot suppose it possible that they can be.

1685. Are you alluding to Newgate market?—I have not seen them in Newgate market; I have seen them in Leadenhall market. I am told, and I can readily believe it, that, not in Newgate market, but in Tyler's market, as it is called, the places are worse than those I have seen: they are, in fact, nothing but vaults under the pavement lighted with gas.

1686. Have the rules and regulations made by the Commissioners been properly enforced?—That I cannot state of my own knowledge; it is the duty of our inspectors to report when they

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Mr. J. Daw.

Mr. W. Santler.

are not, and the absence of their reports to the contrary leads me to presume that they have been duly attended to.

1687. How many inspectors act under the Commissioners?—Four inspectors of pavements and one of sewers.

1688. (To Mr. Santler.) Do you inspect slaughter-houses?—No, I only inspect the sewers.

Mr. Daw. We consider it more the duty of the inspectors of pavements to inspect the slaughter-houses.

1689. Is there any inspection of slaughter-houses by any officer of the Commissioners of Sewers?—Yes, by the inspectors in their several districts. We distinguish the inspectors of pavements as being inspectors of the surface of the ground, Mr. Santler's duty lying exclusively with the sewers underground.

1690. (To Mr. Santler.) Do you find that the contents of the air of the sewers are different or worse in the neighbourhood of slaughter-houses and markets than in other parts?—In the neighbourhood of markets, for instance, in the neighbourhood of Newgate or Leadenhall, where there has been a great accumulation of the refuse of slaughter-houses, such as the blood and dung, and all that sort of thing, certainly there is; but a great deal of that is obviated now by flushing; there is nothing allowed to lie in the sewers now as there was formerly: the markets generally are flushed out once a week. The flushing of Smithfield takes place every day. The mass of water that runs through there, from 11,000 to 12,000 feet of sewage that passes through Smithfield, keeps it clean; and if it is not kept clean it is flushed out. There is very little deposit allowed to remain in the sewers, except it is ballast that we are under the necessity of hoisting out.

1691. Where does the sewage go to?—To the Thames, the ballast we take out. Here is a plan of the sewers of the City of London [*producing the same*]. Smithfield is drained by about 2,000 feet of sewage; but we have about 12,000 feet of sewage that passes through Smithfield in the City, besides the mass of sewage that comes from Goswell-street-road and west of Islington; that all proceeds through Smithfield. We have got nearly 8,900 feet of sewage in the vicinity of Smithfield. We have got 11,000 feet that immediately passes through Smithfield, and we have 2,000 feet of sewage in Smithfield varying from 16 to 20 feet in depth.

1692. What do you mean by a certain number of feet of sewage?—Lineal feet; I mean that a certain number of feet of sewage actually runs through from the various streets there.

1693. What is the average depth of the sewers?—From 16 to 21 feet in Smithfield.

1694. What is the height of the sewers?—From 3 feet 6 inches to 5 feet, it is ample height. In the evidence given some years ago about Smithfield and Islington markets, I find it stated that Smithfield lies 48 feet above low-water mark, and Islington market I think 51; Holborn-bridge lies 28 feet above low-water mark, Smithfield is 48 feet above low-water mark, so that nothing can possibly lie in the sewer.

1695. (To Mr. Daw.) Are those regulations attended to?—I have stated that as far as my own personal knowledge goes I cannot speak, but I presume they are, in the absence of information from our Inspectors to the contrary; it is the duty of our Inspectors to see that those regulations are carried out. The two Inspectors, whose districts comprise the markets, would be the persons who could give the best information on that head.

1696. Is there a periodical registration of slaughter-houses?—No.

1697. If a slaughter-house is once registered, it is not registered again?—No; there is no periodical registration.

1698. It is not intended to register any new slaughter-house?—Certainly not.

1699. Have any slaughter-houses been reported by the Inspectors?—Speaking from memory, I think there have been some in Aldgate High-street and neighbourhood.

1700. Have any proceedings been taken against any occupier of a slaughter-house by the Commissioners?—Yes, I recollect orders having been given, that certain persons should be compelled to drain and so forth.

1701. Has any application been made for suspending or closing a slaughter-house under the powers of the Act?—None.

1702. Are you aware that the Act prohibits any place being used as a slaughter-house in the City, which was not so used at the time of the passing of the Act?—Yes, I apprehend the meaning of the Act therein to have been that no new slaughter-house shall be created.

1703. Does that appear to you to be a wholesome regulation?—I think so, as a step towards improvement.

1704. In what way?—By diminishing the number of slaughtering places within the City, and, perhaps, ultimately getting rid of them.

1705. How does it promote that end?—Otherwise, we might have an indefinite number of new slaughter-houses constructed in various parts.

1706. Is not it to be expected that the existing slaughter-houses will last indefinitely?—I admit that it would seem to have that tendency.

1707. Does not the law by preventing the establishment of any new slaughter-house give a practical monopoly to existing slaughter-houses?—I should say it did practically.

1708. Supposing a small slaughter-house under the existing law were enlarged; for example, supposing a cellar used for slaughtering sheep were enlarged, and made a slaughter-house for killing cattle as well as sheep, would that be considered as an existing slaughter-house under the Act, so as to come within the benefit of the registration?—I think it would come within the benefit of the registration, as far as it was a slaughter-house at the time of the passing of the Act; but I doubt whether we should not be able to have it suppressed, if they were so extensively to remodel it.

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Mr. J. Bow.

Mr. W. Sautler.

1709. Has that case ever arisen in practice?—No.

1710. Should you consider it the duty of your Inspector, supposing such a case were to happen, to report that circumstance to the Commissioners?—Certainly.

1711. What do you think the Commissioners would do in such a case?—I think they would consider it to be an infraction of the law.

1712. And endeavour to suppress it?—And endeavour to suppress it.

1713. They would consider it an infraction of the spirit of the law?—I think so.

1714. Have the Commissioners under the Act, the power of prohibiting the establishment of certain unwholesome trades after the passing of the Act?—Yes.

1715. Can they interfere with the establishment of unwholesome trades, which were in existence at the time of the passing of the Act?—That is a very difficult question to decide. In the first place, the wording of the clause has been repeatedly referred to; but we find it hardly sufficiently defined for us to be able to act upon it. We have taken steps in some cases and have succeeded in effecting improvements under the powers of the Act of Parliament, not compulsorily, but rather in a spirit of persuasion with parties to do so and so and they have done it, probably from the fear of being proceeded against more stringently; but I think the wording of the clause is not sufficiently definite, though, that of course, is a legal question.

1716. Referring to Section 108, the words appear to be as follows: "That if any candle-house, melting-house, melting-place, or soap-house, or any boiling-house for offal, or any manufactory or other building, place, or matter erected, made, or commenced to be carried on in the City after the commencement of this Act, shall be certified to the Commissioners," and so on, do not the terms, therefore, of the clause limit it to manufactories erected after the commencement of the Act?—I have strong reasons to suspect that that would be the effect.

1717. Would it not follow that the Commissioners have no power over unwholesome trades of that class which were in existence before the passing of the Act?—If such were the construction of the clause, it would; but we have not yet had it legally decided.

1718. Has any attempt been made to apply that clause to any manufactory of that description?—Attempts have been made by complaining parties, but proceedings have not been taken by the Commissioners to enforce the law under the clause; other means have been resorted to which have been found to answer the end to a very great extent.

1719. You are aware that the Act prohibits the trade of a knacker within the City?—Yes.

1720. Has that provision been carried into effect?—I believe that there are no knackers within the City of London. I do not think there has been one for many years.

1721. Is not the effect of a provision of that sort to drive the knackers to other parts of the metropolis which are not within the City?—Doubtless. Just out of the City I understand there are several, though that clause of the Act has not driven them there; they have not for several years been in the City.

1722. Does it appear to you to be a legitimate principle of legislation merely to change the locality of unwholesome trades, by making one part of the metropolis exempt and leaving all others subject to them?—Certainly not. There cannot be a doubt that the law should be uniform in such a case as that. It would be exceedingly desirable that the law should be uniform in enactments of that character; but we have nothing to do but with the administration of it.

1723. From what you have observed of the administration of the Act, would you say that it is expedient that all regulations with respect to slaughter-houses, and with respect to unwholesome trades, should be uniform for the entire metropolis?—I think so.

1724. Would you advise that the provisions of the City Sewers' Act should be extended to the entire metropolis?—Unfortunately I think some of our provisions in those matters are not sufficiently defined to be very useful; we have already in many cases found them to be ineffectual in consequence of the want of more distinct powers; they have been open to objections and difficulties, but we have got our eyes upon them. The Act is only for two years, and all these are matters which must come before the Legislature in another twelve months, and the Commission will endeavour to have the Act amended in that respect, no doubt.

1725. Do you think that the distinction between establishments existing at the time of the Act, and those which may be created after the passing of the Act, could be applied to the entire metropolis?—There is very considerable difficulty in applying them to old established trades. As I before observed, the first difficulty that presents itself is to decide what is an unwholesome trade and what is an injurious trade. Very many trades may be considered unwholesome by some persons, whilst a majority will differ in opinion. Hence, considerable difficulty presents itself to define what is an unwholesome trade. Again, it is difficult to see how you are to deal with a trade which has been established and going on for several years, because some persons may represent it to be a nuisance.

1726. Take, for instance, the trade of a tallow-boiler, and, assuming that trade to be an unwholesome trade according to the provisions of this Act, an establishment existing at the time of its passing would not be liable to the restrictions; whereas, if an attempt were made to set up another similar establishment next door to it, it would be prohibited. Does that appear to you to be a good principle of legislation?—I should think not; but it is clear that in the one case if you suppress the trade you commit a great private injury, and you must give a compensation, which is a very difficult and extensive question. I have one case in my mind where the house has been in existence perhaps a hundred years, one of the largest tallow-melters. It has been complained of to the Commissioners, and they have taken steps to call upon the party to amend the system under which he carried on his trade, which he has done, spending a considerable sum of money to effect the object of preventing the nuisance. I have reason to believe, that the nuisance has been to a great extent abated. That is a provision which is made in one clause of our Act.

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Mr. J. Daw.

Mr. W. Santler.

1727. Assuming it to be desirable for the sake of the public, that slaughter-houses should be subject to certain regulations, is there any reason why those regulations should not be extended to existing slaughter-houses? and why they should only be applied to slaughter-houses established after the passing of the Act?—With regard to slaughter-houses, I think the case is rather peculiar; they may be more easily regulated, but I think the same regulations should apply to all.

1728. Would the same reasoning apply to other unwholesome trades, assuming the point to be determined that they are unwholesome?—Doubtless it would, logically speaking; but there is a difficulty, practically, when you have to deal with an extensive factory carried on with a costly system of machinery, perhaps, and where the business has so existed for many years, and the profits may be very considerable, there is a difficulty in suppressing such a concern all of a sudden. It cannot be done without compensation.

1729. But to place it under regulations you think is a perfectly justifiable course?—If any regulations can be provided by which the parties can be compelled to improve their machinery, and so forth, so as to prevent nuisance to the neighbourhood, that would be clearly within the scope of justice, and might, I think, fairly be made matter of law.

1730. And to submit to an inspection?—Yes, certainly; upon the principle, that no man has a right to be a nuisance to his neighbour; that might clearly be carried out.

1731. (*To Mr. Santler.*) Is there any reason to complain of the state of the sewerage in Smithfield or Newgate market, arising out of the markets themselves?—The sewers, more particularly in the neighbourhood of the markets, are flushed or cleared out. I should say there is not more accumulation in the neighbourhood of the markets than in the rest of the City.

1732. You say they are cleared out. Are they cleared out by hand-labour as well as by flushing?—Yes. If the flushing will not operate upon a sewer, it is cleared out by hand.

1733. And you say there is no more nuisance in the neighbourhood of the markets than in the rest of the City?—No.

1734. Does not the operation of flushing send a great quantity of foul air up through the gully holes?—When we used to clear out the sewers only once a-year, or twice a-year, it used to be so; but since the new plan of flushing has been adopted, there is no such effect produced. In the flushing, a good deal depends upon the wind. A south-westerly wind will blow up the Thames, and confine a vast deal of the deposit in the sewers, more particularly on the northern side. And although the sewer may be cleared of the foul air that comes up the gully holes, it affects the habitations in very heavy oppressive weather,

[*The Witnesses withdrew.*]

Mr. J. Cross.

Mr. John Cross examined.

1735. Are you a salesman in Leadenhall market?—Yes.

1736. How long have you been so?—Between 20 and 30 years.

1737. Are you a commission salesman?—Yes.

1738. Is your business in Leadenhall market similar to that of the salesmen in Newgate market?—Yes.

1739. How many meat-salesmen are there in Leadenhall market?—Eight or nine.

1740. Were there as many when you first began the business?—No; not so many by perhaps two or three.

1741. Has the quantity of meat which has been sold in Leadenhall market increased within your memory?—The quantity sold there decreases very much.

1742. To what is that owing?—I do not know, except it is that Newgate market is the principal market, owing to its being nearer for the west end butchers, Leadenhall market being principally confined to the east end trade, and such a great deal of meat goes there, that there is more choice for the buyers.

1743. Is there much meat sold in Leadenhall market?—Yes, there is; but not half what there was 20 years ago.

1744. How much meat do you suppose is sold in the week in Leadenhall market?—Perhaps there may be as many as 700 or 800 or 1000 sheep sold in the course of the week.

1745. How many beasts are sold in the course of the week?—Perhaps 100, besides a great quantity of hind and short quarters.

1746. Where do you get your meat from?—We have meat from out of Suffolk, Norfolk, Essex, and all that way, and occasionally from Yorkshire and Lincolnshire.

1747. Does any come from Scotland?—Yes; there is some which comes to Messrs. Lee and Stubbing; they have a great quantity.

1748. Your supply chiefly comes from the eastern counties?—Yes.

1749. Have you sufficient room in Leadenhall market to dispose of your meat?—Yes, we have plenty of room in the market.

1750. And plenty of room to bring it into the market?—Yes.

1751. Do you attribute the diminished quantity of meat sold in Leadenhall market, to the convenience which the public experiences in having Newgate market as a dead-meat market?—I think Newgate market has come to be so very large, and such an immense quantity of meat goes there, that most people go there because they find there almost everything that they want, attracting even some of the east end trade.

1752. Is that market, from its proximity to Smithfield market, important for the public?—I think it is, because it is very contiguous to Smithfield market.

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Mr. J. Cross.

1753. What is the difference in the distance between Leadenhall market and Newgate market from Smithfield?—Newgate market is close to Smithfield market.

1754. How far is Leadenhall market from Smithfield market?—The best part of a mile.

1755. Do you consider that it is a very great convenience that the dead-meat market should be so near to the live-meat market?—No; I should think if Newgate market was up at Saffron-hill it would be better for the public, and then it would be very handy to Smithfield, for now the immediate streets are all blocked up with the waggons and different things, so that one can scarcely pass up to 9, 10, or even 11 o'clock in the morning.

1756. Do you consider it a matter of great importance that the dead and live-meat markets should be close to each other?—Not so very close.

1757. Is it not of great consequence to the retail dealer, that he should have the two markets near to one another?—For those that come out of the country it is very convenient; but it is not so important to people that live round about and who do not go to Smithfield market, for there are a great number of the trade who do not go to Smithfield market. A number of country butchers, or butchers from the west end of the town come to Smithfield market, and if they find things short or dear there, they go to Newgate market, it being so handy, and buy there dead-meat.

1757*. If the dead-meat market was two miles from the live-meat market, should you consider that it would be a great inconvenience?—I should think it would, but if it were only a quarter of a mile or less, or anything of that sort from the live-meat market, I do not think it would be an inconvenience.

1758. Why would it be an inconvenience if the dead-meat market were two miles distant from the live-meat market?—It would put to inconvenience those who have retail shops, and who keep no horses and carts; they would be at a greater expense, and that extra expense in getting the meat home would enhance its price.

1759. Are not the dead-meat markets daily markets?—Yes.

1760. Is not the great business at Smithfield market confined to one day in the week?—The principal day at Smithfield market is Monday, but a good many parties go there on Friday to buy meat.

1761. Does it not follow that a large number of persons must attend the dead-meat market, who do not on the same day attend the live-meat market?—Newgate market is so situated, that it is handy for parties living a quarter of a mile all round.

1762. But if there was no such market as Smithfield in existence there, but it was removed, and Newgate market was in existence, would there be less or more custom than there is now. Supposing, instead of Smithfield market being where it is, it were two miles distant from where it is?—Of course, it would not be so convenient as where it is now.

1763. Would the custom of Newgate market be materially affected?—I certainly should say that it would, and there would not be so many go to Newgate market as there are, because it being so very handy they kill two birds with one stone.

1764. That is on the particular days on which Smithfield market is held?—Yes.

1765. But on the other days?—No.

1766. Supposing the Smithfield market were removed two miles off from where it at present is, and that Newgate market were removed to Smithfield, would the trade continue?—I do not think it would be so good as it now is, and there would be a greater nuisance from more things coming back again into the City than there is now, because now there are such good outlets to the east, and west, and north, and south. After customers have bought their meat, a few can go this way, and a few go that, and by the different outlets; whereas then they would have to come in double droves, and it would be a great inconvenience, because they must all come back again through the streets.

1767. I am supposing that Smithfield market were removed two miles off?—That would be entirely out of the question, I think.

1768. Do you attend Smithfield market?—Occasionally I do.

1769. You do not attend Newgate market much?—No, I have not any business there.

1770. You slaughter a great many animals in Leadenhall market?—I have done so, but I do not kill so many now.

1771. Are there a good many slaughter-houses in the market?—There are no slaughter-houses, but a few cellars where the things are killed.

1772. What are killed in those cellars?—Sheep.

1773. How many sheep should you say were killed in the course of the week in those cellars?—Perhaps on the average about 500 or 600.

1774. Are more killed there in summer than in winter?—Yes, and more so in hot weather, as the country dead meat then comes up short.

1775. How many more?—That depends entirely upon how the trade is. There is so much country meat brought in dead to Leadenhall market, and to the different markets, that you do not require to have so many killed in London, because the country meat that comes up must be disposed of; and therefore we cannot kill the proportion we should do, in case there was none brought up from the country.

1776. Is the business of Leadenhall market wholesale or retail?—Both wholesale and retail.

1777. Is the greater part of it wholesale?—There are almost as many in the wholesale business as there are of cutting or retail butchers.

1778. Is the greater quantity of meat sold by wholesale or by retail?—The wholesale and retail markets are separate, but adjoin, and the greater part is sold by wholesale, because the different buyers from the different streets all round, and especially from the east end, come to the market in the morning to buy their meat.

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Mr. J. Cross.

1779. Is the meat which is sold retail of an inferior quality, or is it good meat?—It is good meat; we have no tradesmen in the market who sell inferior meat.

1780. Are there a considerable number of hides sold in Leadenhall market?—Yes.

1781. That is quite a separate business from the butchers?—Yes, they have two separate markets adjoining for skins and hides.

1782. Do the butchers sell the hides to those dealers?—One or two of them that kill 20 or 30, or 40 beasts a-week, very likely sell their hides; but the hides are generally sent to hide salesmen, men who sell hides.

1783. Do you know what the nature of the business of the hide sellers is?—I know that the hides are brought to the hide salesmen to sell; but as to the nature of the business, I do not know anything about it.

1784. Where are the hides brought from?—From all parts.

1785. How are they brought?—Some are brought by the carriers, and some bring their own up; and the hide salesman, or the sheep-skin salesman, sends his cart collecting every night.

1786. How soon after the sheep are killed are the hides brought to the hide market?—If the weather will admit of it, if it is cold weather, they keep the hides three or four days. On Monday they short kill, and then on Tuesday they may kill a few more, and so on daily to the end of the week; and if the weather is cold, they keep the hides till they get a number, or till the latter end of the week, when they kill for the Saturday's supply, and then they may have a dozen hides or more. Some of those who slaughter largely may sell their own hides.

1787. Do the hide salesmen sell on their own account, or on account of their employers?—On account of their employers.

[The Witness withdrew.]

Mr. J. Batterbury.

Mr. John Henry Batterbury examined.

1788. What office do you hold in the Metropolitan Commission of Sewers?—I am inspector of flushing.

1789. Does that office lead you to inspect the sewers in the neighbourhood of the meat markets and slaughter-houses?—It does.

1790. Do the duties of that office make you acquainted with the character of the different sewers, and the atmosphere in those sewers?—Yes, quite so.

1791. Can you give the Commission any information respecting the character of the sewers, and the atmosphere in them, in the immediate neighbourhood of the meat markets and slaughter-houses as compared with other parts of London?—Yes. Newport market sewer I have just had instructions to cleanse. It was very foul, and the smells were very offensive when we first opened it; but we have removed the whole of the deposit. Yet notwithstanding that this sewer is clean, and the sewers in the neighbourhood also clean, the atmosphere of the sewer is still very offensive, from the slaughter-house drains constantly discharging foul effluvia into it, proceeding, no doubt, from the retention of a portion of the refuse sent into them.

1792. How was that deposit removed?—It was removed in water, by manual labour, by flushing; that is, by collecting a large body of water and letting it off suddenly, so as to remove the deposit suspended in water, aided by trucks in the sewer. The deposit was sent into the St. Martin's-lane sewer, where there was a good current of water, which carried it, without further aid, into the Thames.

1793. When you say that the deposit was "removed," do you mean that it was removed by hand, and then carted away?—No, it was removed in the sewer, suspended in water, to the Thames. None of it was raised to the surface or carted away.

1794. It was stirred up and then flushed?—Yes, whilst under water, to aid in keeping the heavier portion in suspension whilst the flush of water was acting on it.

1795. What do you think is the influence of such matters as get into the sewers from a market like Newport market upon the atmosphere which escapes from the neighbouring gully-holes?—It would undoubtedly be most offensive, and I conceive would be extremely prejudicial to the health of the locality.

1796. Do you know, from your own experience, that the air which escapes from the gully-holes in the vicinity of slaughter-houses and meat markets is more offensive than the air which escapes from the gully-holes in other parts of London?—I know that the sewers receiving matter from slaughter-houses and meat markets are peculiarly offensive. I have traversed a very large number of sewers, and find this to be the invariable condition.

1797. Do you find, in traversing the sewers, a great difference when you approach a slaughter-house?—Yes; even when one butcher kills you can smell it very strongly in the sewer, if there is not a good current of water to carry the refuse sent into it away at once.

1798. Are you acquainted with Silver-street, Golden square?—Yes.

1799. Have you had many complaints of the effluvia from the gully-holes there?—Yes; there is one near a butcher's shop which has been complained of. We have had the sewer cleansed, but still there is a noxious effluvia, which I have no doubt proceeds from the drains frequently retaining the offensive matters sent into them.

1800. Is there a large slaughter-house near there?—Yes. I have known several cases where the drains from butchers' shops come in, and the effluvia is very bad indeed, even where there is no deposit in the sewer.

1801. Can you flush the sewers effectually so as to prevent the nuisance arising from

slaughter-houses?—Those which are regularly formed, in good condition, and that have some fall, we can thoroughly flush; but there are very many of the sewers with irregular inverts, in bad repair, and that are at lower levels than their outlets, forming cesspools, these it is almost impossible to flush; but even with a very small fall, where the inverts are regular, the work can be perfectly done.

1802. The main object of a sewer is to carry off as rapidly as possible any offensive decomposing matter?—Sewers should be so formed, I conceive, as to carry off rapidly and continuously all offensive decomposing or other matters sent into them. But most of the present sewers retain a large proportion of the offensive matters, hence the necessity for artificial means of cleansing them, so that one of two modes has to be resorted to; either the offensive matters have to be removed at distant intervals, generally, under the old system, when they had accumulated to such an extent as to stop up the house-drains, and were complained of on that account, and which, under the old system, would have been by lifting the deposit to the surface of the streets and carting it away, or accumulations would be prevented by frequent flushing, as now practised, the whole of the work being carried on underground within the sewers.

1803. And you find it at the present period a difficult task to do it effectually?—There are many conditions which render the effectual performance of this work a matter of great difficulty in a great number of sewers, as in many the levels are very defective, being below their outlets, frequently falling the reverse way, and thus forming cesspools, or they are in a bad state of repair; and in the low districts, where the sewage is penned back for five or six hours every tide, flushing can only be resorted to during the intervals: and as accumulations naturally take place to a much greater extent in sewers so situated, much more in proportion has to be removed, and the difficulties of removal are proportionately increased.

1804. Would it be important to prevent as much as possible the ingress into the sewers of such offensive decomposing animal and vegetable matter?—Yes; I should say so, decidedly, in the present system.

1805. Do you apprehend that, in removing the matter from one place, you only drive it lower, or do you think you get rid of the whole into the Thames?—We invariably follow the matter till it gets into a current that will carry it right away into the Thames.

1806. You think it is carried away?—I know it is, because I have myself examined every one of the sewers under my charge. I have gone through all that it is possible to go through.

1807. Do you find considerable increase of decomposing matters arising from the slaughter-houses as compared with other parts of the sewers?—Yes, a very considerable increase. I have been in many sewers where heaps are formed in a very short time by the sweepings from the slaughter-houses, composed of coagulated blood and the general refuse of such places.

1808. Do you consider that the present system of flushing remedies the evil arising from the great quantity of decomposing matter in those slaughter-houses?—The system of flushing would remove all decomposing matter sent from the slaughter-houses into the sewers, where these were regular and had some fall, and it would thus relieve the neighbourhood of so much of the impurity. But as the present brick and mortar drains retain a large amount of foul decomposing offensive matter, which emits offensive effluvia, and which is sent into the sewer, and from thence finds its way to the external atmosphere, the relief afforded by flushing, although very considerable, is partial in its operation, so that the system of flushing must be looked upon as a palliative of the evil, rather than as a complete remedy.

1809. Have you examined the sewers in the neighbourhood of Clare market?—Yes.

1810. In what condition are they?—They are now in very good condition, being free from deposit, from being periodically flushed; but very offensive smells proceed from the drains of the slaughter-houses, &c. rendering the atmosphere of the sewers offensive.

[*The Witness withdrew.*]

Adjourned to Wednesday next at 12 o'clock.

WEDNESDAY, January 23, 1850.

GEORGE CORNEWALL LEWIS, Esq., in the Chair.

Mr. Francis Hutchinson examined.

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1811. Are you the medical officer of the West London Union?—I am of the north district.

1812. Is that a district which comprehends Smithfield?—It is.

1813. What are the boundaries of the district?—It comprises the whole of Smithfield. It is bounded on the west side by Farringdon-street and Victoria-street, and on the north side by West-street and Long-lane; on the east side the boundary includes St. Bartholomew's-close and the hospital, and continues along the Old Bailey to Fleet-lane, which forms its boundary on the south side.

1814. Are you in the habit of visiting the poor at their houses, in the neighbourhood of Smithfield?—I am.

1815. How long have you held your present office?—About two years and a half. I have been in practice for the last 20 years in that neighbourhood.

1816. Has your practice lain at all among the poor?—Partly; very much since I have been connected with the Union.

Mr. F. Hutchinson.

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Mr. F. Hutchinson.

1817. Have you made any observations as to the health of persons residing near Smithfield market?—I have.

1818. What has been the result of your observations?—I am not aware that the market itself is at all injurious to the health of the immediate neighbourhood, but I think that some of the adjuncts—some of the trades carried on in connexion with the market, may have been, and I have no doubt are, decidedly detrimental to health.

1819. To what trades do you particularly refer?—I mean the slaughter-houses, the bone-boilers, and the knackers' yards which are indirectly connected with Smithfield, but not directly.

1820. Have you ever traced a close connexion between an inferior state of health in a town, and the existence of any unwholesome trade?—We find that those places where slaughter-houses exist are almost invariably dirty and filthy, and the dwellings are neglected, such as Fox and Knot-court, Three Diamond-court, and Bear-alley; those are the only places where they have slaughter-houses in the district. Those courts are exceedingly unhealthy; many persons who live in the immediate vicinity suffer from fevers and diseases of that kind.

1821. Are you acquainted with the sanitary provisions of the City Sewers Act?—I cannot say that I am.

1822. Have you observed whether the inspection that is carried on under that Act has produced any improvement in the state of the slaughter-houses?—I think, decidedly. I have been repeatedly called upon to visit some of the slaughter-houses, and I have reported upon them; they have been kept much cleaner of late. I believe the City authorities have done a great deal of late years to improve the sanitary condition of the City.

1823. Are you of opinion that the slaughter-houses in the neighbourhood of Smithfield, in their present state, are injurious to health?—I think so. I think that where there is a slaughter-house, it is impossible to avoid a great deal of filth, and the inhabitants in the immediate neighbourhood I have always found to be dirty in their habits. Their houses are so much neglected that hardly any persons of decent calling will live in those places, and as far as I have seen, they are abandoned almost entirely to the lowest of the Irish and to the worst of our countrymen. They appear to be almost always the resort of bad characters, pickpockets, and persons of that kind.

1824. Is the health of that population inferior to that of a more decent population?—No doubt of it.

1825. Would you advise that slaughter-houses should be absolutely prohibited within the City?—I think so; they are the source of a great deal of illness and misery.

1826. Would you extend that prohibition to the entire metropolis, or would you confine it to the City?—I think it should apply to the whole metropolis,—at least, wherever there is a crowded neighbourhood.

1827. Have you been able to perceive that the market of Smithfield, strictly so called, that is to say, the space which is used on Mondays and Fridays for the sale of animals, exercises any deleterious influence upon the health of the inhabitants of the district?—I have no reason to think so. I am led to believe, and have always considered that on the market days, Mondays and Fridays, it is perhaps a great nuisance. But it is a great deal counterbalanced by having such a large space unoccupied the rest of the week. The centre of Smithfield now is kept as clean as a market can be kept. I believe that the filth which must necessarily accumulate on the market days is removed very speedily by the City authorities. I do not imagine that Smithfield market of itself exercises any deleterious effects upon the health of the population in its immediate neighbourhood.

1828. Are you acquainted with the opinions of other professional gentlemen in the neighbourhood upon the subject?—Yes. They consider that it is on the market days a nuisance, on account of crowding an immense quantity of cattle in too small a space, and the cruelties, which are, perhaps, a necessary consequence.

1829. Confining your attention to the subject of health, what would you say was the professional opinion of competent judges in that neighbourhood, as to the effect upon health, of the market strictly so called?—Merely as regards the market, I believe it is their opinion that it is a fine open space, and that the nuisance of the market on market days is perhaps counterbalanced by the benefit which the neighbourhood receives by its being an open space on other days.

1830. Do you happen to know anything about Cloth Fair and that neighbourhood?—Yes.

1831. Are there not some very narrow courts there?—Yes, very narrow and unhealthy. Many of those houses I consider to be unfit for human habitation.

1832. Does that unhealthiness at all arise from the proximity of the place to Smithfield?—I am afraid that has something to do with it; Smithfield draws together a great many bad characters. That is one of the oldest parts of London which was not destroyed by the Fire of London, and many of the houses are perhaps the oldest in the City. They are merely made of lath and plaster, and ought to come down.

1833. Do you know the state of health generally of that particular district?—The district is in a very dirty state; we have a great deal of illness there generally.

1834. Are the inhabitants of those courts in any way connected with Smithfield market?—I think many of them are slaughtermen and others connected with the business of the market. Those courts are so dirty that respectable artizans or porters will not reside in them, and they are abandoned to the lowest of our own countrymen and to the poor Irish. The result is, that the poor's rates are very much increased by having those people to maintain.

1835. In what parish are those courts situated?—Chiefly in St. Bartholomew's the Great and St. Sepulchre's.

1836. In the course of your experience, have you found the small-pox more than usually prevalent in the neighbourhood of Smithfield?—I cannot say that I have; we have recourse to vaccination to a great extent, and we do not meet with many cases of small-pox now: formerly it has at different times been very prevalent here. January 23, 1850.
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1837. Has the system of gratuitous vaccination been effectual in that Union in preventing small-pox?—I think it has to a great extent.

1838. Two or three years ago you state that small-pox was prevalent in that neighbourhood?—We had it at certain times, but not generally. We have occasionally an outbreak of disease, and it may go on with severity for some time, and then it passes away.

1839. In those crowded and filthy places in the immediate neighbourhood of the knackers' yards and slaughter-houses, do the ordinary children's maladies, such as scarlet fever, put on a more putrid or fatal type than usual. Have you observed any peculiarly severe modification of those diseases which you consider to be connected with that locality?—I have, certainly; we see a great deal of an unhealthy state of the system produced, such as scrofula.

1840. The ordure you state is removed rapidly and tolerably completely from Smithfield after the market days?—Yes.

1841. Is the fluid excrement likewise removed?—It is removed immediately after the market day; it is never allowed to remain there for any length of time.

1842. What effect do you suppose would be produced upon the atmosphere by the percolation of urine from so many thousands of sheep and beasts twice a-week in the soil for so long a period of time?—Of course, like every other offensive matter, it would be injurious to a certain extent; but the market is paved, and I do not think much of it remains, though a certain portion of it may pass between the stones.

1843. Do you think it is desirable that a system of things should be allowed by which a vast mass of offensive matter is produced which cannot be removed by ordinary scavenging (which only deals with the solid and removable excrements); a system of things which must necessarily cause the soil to be permeated by the urine and fluid excrements of those animals. Is it conformable to our ideas of what should be done for the health of a crowded city to have a space in the centre of the City liable to those contingencies?—I am quite aware that it would be better that we should be without it as regards the health of the City.

1844. Have you observed any peculiar modification of the diseases in the neighbourhood except the tendency of scarlet fever and other diseases to take on a putrid and fatal type. Are there any other forms of diseases which you attribute to the bad atmosphere of those localities?—I think that fevers are the chief diseases that we meet with, and many of those are engendered, I believe, by the habits and homes of the people, and are not entirely referable to the locality in which they live.

1845. If you were called to a case of scarlet fever in one of those localities, should you expect it to assume a more dangerous and fatal form than in a healthy locality?—Yes; but I ascribe much of that to the people themselves; they are naturally dirty in their habits, and their houses are in a very bad state.

1846. You do not consider the cause to be the proximity of Smithfield, but the low and filthy condition of the houses?—Yes; but, as I said before, I think a great deal depends upon the slaughter-houses. In all those places where the slaughtering business is carried on, the houses are so neglected and so filthy, that no artizans, porters, or persons of that class, of any character, will live in them.

1847. This unhealthy state of the neighbourhoods relates to Smithfield market, inasmuch as the trades which make those places unhealthy are connected with the existence of the market in that locality?—Just so.

1848. You know that there is Bartholomew's Hospital there?—Yes.

1849. Are you aware of the opinions of the medical officers of that establishment respecting Smithfield market?—Yes.

1850. What is their opinion?—I saw in one of their Reports that they think the open space is very important for the well-being of the Hospital.

1851. Do they complain of sickness being caused by the proximity of the market?—No, the slaughter-houses are not near the Hospital; they are on the other side of Smithfield.

1852. Are you aware that, during the period of the cholera, there was not a single case in the immediate vicinity of Smithfield?—No; there were a great many in the immediate vicinity.

1853. Where?—In the courts around—in Fox and Knot-court, in Bear-alley, in Cock-lane, in Hosier-lane, in West-street, and other places; but I believe not in Smithfield itself.

1854. Those places are on the west side of Smithfield?—Yes.

1855. Do you know of any cases in the Bartholomew's district?—We had cases in the Bartholomew's district; I think Mr. Simon (who is here) would be able to give more precise information upon these matters. But in West-street, at the workhouse for instance, many died. As regards Smithfield, I believe that the market had nothing to do with the cholera; I cannot trace the slightest connexion between the market and that disease.

1856. Are you aware that the medical officers of St. Bartholomew's Hospital generally consider it a very healthy site?—Decidedly; the trades in connexion with the market are much more injurious than the market itself.

1857. Have you considered the probable effect upon health of an atmosphere which must receive the exhalations from a soil saturated with the fluid excrement of animals?—It has been a market for many centuries, and I do not know that it has had any particularly injurious effect upon the persons immediately surrounding it. The regulations now are so good, and the sewerage so much improved, that I do not think it is more injurious than other places similarly used generally are.

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1858. If the state of the atmosphere happened to be injurious, St. Bartholomew's Hospital would be likely to suffer?—Yes; I certainly think that some of the trades connected with the market are far more injurious than the market itself.

[The Witness withdrew.]

Mr. R. Moseley.

Mr. Robert Moseley examined.

1859. Are you the traffic manager of the Eastern Counties Railway?—I am.

1860. Has the transport of live stock to London by railway increased lately?—Very considerably.

1861. Is it principally cattle or sheep?—There is an increase in sheep, and there is an increase in oxen.

1862. What railways do you speak of particularly?—The Eastern Counties Railway and the Norfolk Railway.

1863. Is there greater facility for sending live stock by railway than in any other manner?—Yes.

1864. Do they come up in better condition if sent by railway than if they walk?—Yes.

1865. Is any dead meat sent by railway?—Yes, very considerable quantities.

1866. At what times of the year does it principally come?—The heavy season for dead meat commences in December, and continues till the end of February. We are receiving dead meat throughout the year, but not in such considerable quantities as in the three months which I have mentioned.

1867. Does the transport of dead meat increase?—Yes, it does.

1868. Is the chief part of the dead meat beef or mutton?—From Norfolk, it is principally beef; from Lincolnshire, principally mutton.

1869. What are the principal counties which send up both live stock and dead meat?—The great supplies come from Norfolk, Suffolk, Essex, Cambridgeshire, and Lincolnshire.

1870. Has the effect of the railways been to obtain supplies from a greater distance than formerly?—Yes, it has.

1871. Is that effect likely to increase?—I think it is; as in the year 1845 the quantity of dead meat carried on the Eastern Counties Railway was about 100 tons per week. The quantity of dead meat which we are now carrying is about 600 tons per week, from the facilities which we give to the trade. We find what are called hampers or peds, and cloths, and small butchers are induced to hire them, who make it quite a business to feed a little stock in the country and send it up to London, paying us a moderate rate for using the peds. They could not afford to find peds themselves, for in the event of loss, it would be more than equal to any little profit that could be obtained in the sale of the meat. The consequence has been that by the construction of the railway through those producing districts, we have enabled men in the country to connect themselves with the London meat markets. Formerly, they were completely shut out by expensive road conveyances, they wanted cheaper communication; the establishment of railways has benefited them considerably, and it is bringing upon our railway an enormous increase of traffic.

1872. Do all those cattle go to Smithfield, or do any go directly to the butchers?—In a general way they are landed at Tottenham, that is the Eastern Counties great landing place for live stock; it is six miles below London, from whence they are walked thence to the lairs, where they rest about 24 hours and then taken to Smithfield at a very early hour on Monday morning, so that they may get into the market by 2 or 3 o'clock. The dead meat comes to our goods' station in London, from whence we remove it to Newgate and Leadenhall markets by our vans and waggons; we pitch the meat at the various salesmen's stalls.

1873. Have you ever heard complaints with respect to the want of space at Newgate and Leadenhall markets?—At Newgate market particularly so. There are sometimes standing in the morning from 30 to 40 horses, vans and waggons laden with meat, which cannot be pitched on account of the limited space there is to do the business in; the consequence is, that meat which ought to be at the stalls at 3 or 4 in the morning is not pitched till 6 or 7 o'clock. That arises much from the want of increased room. But when the butchers get the meat so late, the blame of the late delivery is sometimes attributed directly to a mishap on the railway. But the fact is, that the great detention arises from the want of more room at Newgate market. We also pitch a considerable quantity of game and poultry in addition to the dead meat. We pitch large quantities at Leadenhall market, and there we find a want of space to transact our business. I allude to that portion of Leadenhall allotted to the poultry trade, and I consider that if our business continues to grow as it has done of late years, it will be utterly impossible to manage it satisfactorily, either to the Railway Company or to the consignees, unless more accommodation is given in the markets for this traffic.

1874. Do you know what use is made of Farringdon market?—That is not used so much for dead meat; we pitch in the season a considerable quantity of vegetables there, but not much dead meat; our general consignments are to Newgate and Leadenhall.

1875. How early in the morning do you begin to send to Newgate market from the railway station?—We commence on arrival of the first train, at 1 o'clock in the morning, and we continue to pitch the meat till 6 or 7 o'clock; sometimes, and more particularly during the past Christmas, we pitched in a week about 1,000 tons of dead meat, game and poultry.

1876. Supposing you began at 1 o'clock, and that you had space sufficient at Newgate market, how soon could you get through the deliveries?—I think we should get through the deliveries fully two hours earlier than at present, and those two hours would be of the greatest

possible advantage to the trade. The object is to get the meat on the standing at 5 o'clock at the latest, and as much earlier as possible.

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Mr. R. Mosley.

1877. Are you aware of the capacity of Farringdon market?—I am not.

1878. Is it important to you, that those markets to which you send live-stock and dead meat, should be in immediate proximity to each other?—Yes. If we could get very near to the market by railway, a large sum of money would be saved to the public in this way. The meat is carted to the markets in London from the railway, and there is a charge for that cartage. Then the meat is pitched from the waggons on the stalls, and for which there is a second charge, I should think that upon what is brought by our company alone, involves an expense of about 7,000*l.* a-year, consequent upon the break between the markets and or railway termini.

1879. Supposing there were a railway communication straight to the live-meat market from the Eastern Counties railway, would that cause a great saving to the public?—Decidedly, and it would prevent much harm arising to the meat. The oftener it is removed, the more it deteriorates in value.

1880. The question refers to live-stock. Supposing that instead of being stopped at Tottenham and walked to the lairs, and then to Smithfield, you had a railway communication straight to the live-meat market, would that be a great advantage?—It would, decidedly.

1881. Supposing there were also a railway communication to the dead-meat market, would that also be of great advantage?—I apprehend that would be a decided advantage to the public.

1882. Is there much deterioration in meat, both live and dead, from moving it about?—There is.

1883. To any considerable amount?—The dead meat suffers by the several removals. When live-stock is sent from Norfolk, for example, it comes to the lairs and remains there for 24 hours, and that is an expense, of course, to the grazier. I think it would be found in practice, that if the market were close to the railway, the rules would be to retain the beast in the homestead stall a day longer, and then bring it direct into the market.

1884. Supposing Smithfield market were held on Tuesday instead of Monday, would it be the practice to keep live stock two days longer in the homestead?—It must leave the grazier on the Monday for the Tuesday morning's market. The great bulk now leaves Norwich on the Saturday, and it arrives at Tottenham in the afternoon, some on Sunday.

1885. How many hours are they in going from Norwich to London?—The average time that we are now working that traffic is seven hours and a half.

1886. So that a grazier near Norwich ought to be informed on the Monday morning, that stock will be wanted for the Tuesday morning's market?—Yes.

1887. Do you carry live-stock by the head or by the truck?—In general we carry it by the head.

1888. That is much better for the beasts, is it not; are they not less crowded?—It has this effect, that if you charge by the head, the man in charge of the stock is not so anxious to thrust so many into a truck; but if you charge by the truck he is less particular in that respect.

1889. Do you think that a live and a dead-meat market in close proximity with each other, and also in close proximity with a railway station, would cause great economy to the public?—I am sure of it.

1890. To a very large amount?—To a very large amount; great quantities of lean stock for the last three years have been coming out of Scotland, and going across to the grazing districts of Norfolk to be fattened. We have had that traffic now for about three years in connexion with the London and North Western Company, and every year we find it increasing almost twofold.

1891. That arrangement would imply that the great wholesale dead-meat market should, like the live-meat market, be extramural?—Just so.

1892. Would it be more expensive for the butcher to transport the meat from the extramural market to his place of sale, than it is now to pay for its carriage in the first instance, from the railway station to the intramural, and then to his place of sale?—I think he would, in many cases, save the cost of the first cartage altogether, because his own cart now goes to Newgate market, and it would take the meat to his west end house, or wherever his place of sale might be. The butcher almost always has his own horse and cart to take the meat from Newgate market to his shop.

1893. The horse and cart is part of his stock in trade?—Yes.

1894. Would not that apply only to butchers who bought rather in a wholesale way?—The great purchases in Newgate market, I think, are made by the wholesale men.

1895. Do you think that a butcher ought to carry on the trade without having proper stock in trade, that stock in trade including his horse and cart?—A selection of that sort would put the market on a broader basis certainly.

1896. Would you see any great objection to the live-stock market and the dead-meat market being two miles apart, supposing there were a railway communication to each?—I think when stock comes to London, intended to be slaughtered, the nearer you can bring it to the place where it is ultimately to be sold the better.

1897. Supposing Smithfield market were removed to near Islington, or near Pentonville, and the present space of Smithfield were converted into a dead-meat market, and there were a railway communication to both, do you think that would be a disadvantageous arrangement?—If it were possible to make a railway communication with Smithfield, I think it would be desirable. No doubt that remark would apply to any other point which might be selected. I maintain, with respect to meat and everything else travelling by railway, that the nearer you can bring it to the point where it is to be sold the better.

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1898. You are aware that a railway is in course of construction, which will communicate with the different railways on the north of London?—Yes; the East and West India Dock line, the line is making now.

1899. When is it likely to be finished?—This year, I am told.

1900. That line will be in communication with the Great Northern, the North Western, and the Eastern Counties railways, and will pass close to the large open space near Pentonville prison?—Yes.

1901. Have you anything further to state to the Commissioners?—I have put down the quantity of stock carried for the year 1849 by the Eastern Counties railway; oxen, 57,300; sheep, 275,000; pigs and calves, 15,000; and we carried in the same year 18,000 tons of dead meat.

1902. Were all those English cattle?—The great bulk were. With respect to foreign cattle, we have a communication by means of our Woolwich branch to the river Thames, and we are about making arrangements to receive from the foreign vessels, from Germany for instance, foreign stock, and bring it over our line to Tottenham, from whence it will walk to the lairs.

1903. Is it Sleswig-Holstein cattle?—Yes. There is also cattle coming from Scotland, by means of steam-packets, and we purpose landing them at Woolwich; so that we may bring the whole of the stock together for the inspection of the salesmen, and accommodation of the public.

[The Witness withdrew.]

Mr. W. Giblett.

Mr. William Giblett further examined.

1904. Can you inform the Commissioners of the number and value of the stock sold in Smithfield and Newgate markets annually?—I have applied myself to the subject, and made some calculations which are necessarily speculative; and, with the permission of the Commissioners, I will draw their attention to the data on which I made these calculations. The gross sum that changes hands in the two markets, that is, in Smithfield and Newgate markets, I make by these calculations to exceed the sum of 10,000,000*l.* sterling annually.

1905. How much do you assign to Smithfield, and how much to Newgate market?—To Smithfield I assign the sum of 6,182,800*l.*; to Newgate market, under the head of carcass meat, that is to say, animals which are slaughtered by the carcass butchers for the express purpose of supplying the wholesale meat market, 959,400*l.*, that is, with town-killed meat, annually; and, in order to arrive at the best calculation which I am able with respect to country-killed meat, I assume that that is three times as much as the amount slaughtered by the carcass butchers, and that comes to 2,878,200*l.* The total amount sold at these two markets is 10,020,400*l.* annually.

1906. What is the total of Newgate market, independently of Smithfield?—3,837,600*l.* I will hand in a statement of the data upon which my calculations are founded. [The same was read as follows.]

ESTIMATE of the NUMBER and VALUE of STOCK sold in SMITHFIELD.

	Average, say Weekly.			Annually.
Beasts	4,000 at £16	0 per head	£64,000	= £3,328,000
Sheep and lambs	30,000 „	1 15 „	52,500	= 2,730,000
Calves	400 „	4 0 „	1,600	= 83,200
Pigs	400 „	2 0 „	800	= 41,600
			<u>£118,900</u>	= <u>6,182,800</u>

Estimate of the number and value of stock slaughtered by carcass butchers in London, expressly to supply Newgate market. In winter less; in summer more.

	Average, say Weekly.			
Beasts	1,000 at £12	0 per head	£12,000	
Sheep and lambs	3,000 „	1 15 „	5,250	
Calves	200 „	4 0 „	800	
Pigs	200 „	2 0 „	400	
			<u>£18,450</u>	= <u>959,400</u>

Estimate of the value of meat consigned from the country to be sold at Newgate market annually, taken at three times the amount of that killed by the carcass butchers, as above

	<u>2,878,200</u>
Total	<u>£10,020,400</u>

Exclusive of country killed meat consigned to Leadenhall and Whitechapel markets.

1907. Why do you think that the quantity of meat consigned from the country to be sold at Newgate market is three times as much as that killed by the carcass butchers?—I think it is nearer four times the amount. There is not so much as four times, but there is more than three times.

1908. Can you state what proportion of that quantity slaughtered for Newgate market is slaughtered in the cellars at Newgate market?—A great many are killed in the cellars at Newgate market, and in the slaughter-houses contiguous to the market, particularly in the summer months, and the remaining number are killed in the immediate proximity of the market.

1909. Are you aware that the total value of the animals sold in Smithfield in the course of a year, has been estimated by Mr. Hicks, in his evidence before the Smithfield Market Committee of last year, in answer to question 6593, at the sum of 7,251,375*l.*?—No, I was not aware that Mr. Hicks, or any other person, had made any statement of the kind.

1910. Mr. Hicks estimates 224,000 cattle at 18*l.* 10*s.* a-piece, and 1,550,000 sheep at 1*l.* 18*s.* a-piece, 27,300 calves at 3*l.* 15*s.* a-piece, and 40,000 pigs at 30*s.* each. He, therefore, takes the price of the cattle and sheep rather higher than you have done, and the price of the calves and pigs rather lower. Do your prices appear to you to be preferable to his?—We are lower this last year in price per pound than we were in the year upon which Mr. Hicks made his estimate, and gave his evidence, besides which in that year we had 40,000 pigs chiefly from Ireland, and this last year that supply fell off to a very small number; hence the difference is accounted for. I would observe, that as striking the average at which all the animals are sold is speculative, it depends upon the judgment of the man who does it. I still hold to my figures for last year (and every year will vary in number and price), believing that I have not exaggerated, but kept rather under in order to be at the minimum.

1911. Do you think that both your estimates, namely, for Smithfield and for Newgate market, are under rather than over the truth?—I should say, decidedly, rather under than over.

1912. It appears from the returns, that the number of cattle sold in Smithfield market has increased considerably during the last 20 years; but that the number of sheep sold has remained stationary. Can you explain the cause of that difference?—I am not aware that the number of sheep is stationary; but that the number of beasts sold in the live-stock market is greater in proportion to the number of sheep. I think it may be accounted for thus: first, the supply of beasts from abroad during the last two or three years, and secondly, that more sheep are killed in the country in proportion to beasts. A person disposed to slaughter beasts in the country to send up to the dead-meat market would be deterred by the expense, as he would be exposed to the same rate of charge per pound for carriage for all the common and coarse parts which belong to a carcass of beef, and which does not fetch so much here as in the country. I hope I shall make myself understood upon this point. If I send a carcass of beef 100 miles from the country, I am subject to the charge of from 3*d.* to 4*d.* per stone for the carriage of the whole. One-half of that carcass is what is called coarse or boiling beef, and that will not afford to pay the expense of carriage as the best parts will. The animal alive walks up, or comes by railway at less expense. With respect to the smaller proportion of sheep, I would state that during the last five or ten years we have had too fatal circumstances applying to flocks of sheep throughout the country. One that I allude to is the rot in sheep, and the other is the epidemic, which very much reduced their number; and in 1846 and 1847, the price ran up in consequence. These facts, I think, may be taken into account in considering the cause of there not being so many sheep.

1913. Is it not the case that a carcass of mutton does not deteriorate in its journey on the railway so much as a carcass of beef?—There is more facility for bringing it on account of its smallness of size; but I have seen beef come into the market in quite as good order, 400 miles from Scotland, as I have seen carcasses of mutton come.

1914. In your former evidence you stated that it was of the utmost importance that the live and dead-meat markets should be as near to each other as possible. What are your reasons for that opinion?—My reasons, I apprehend, are very cogent, and it is a matter to which I attach very great importance. In the first place, if you were to remove the live-stock market from the dead-meat market to a distance of two miles, it would derange and perplex the trade to an extent which would almost bring them into another way of doing business. It would be the means of throwing out of the live-stock market a great number of purchasers, and also of throwing a great monopoly into the hands of the carcass butchers. If I were a carcass butcher, I should be glad enough to see such an order of things brought about.

1915. How would the carcass butchers be interested in that state of things?—In so far as the retail butcher was thrown out of the live market, the carcass butcher would have the retail butcher for a customer, instead of the retail butcher going to the live market to lay out his money there, for it would be physically impossible for the retail man to attend the two markets, two miles apart, on the same morning, and be at his home at the early hour which is absolutely necessary to a retail butcher. Another evil would arise: the grazier would have for his customer the carcass butcher instead of the retail, to his loss and injury. The retail butcher is the grazier's best customer.

1916. Would not that objection apply only to one day in the week?—It would apply directly to two days in the week, and it is as good as though it applied to every day, inasmuch, as if a man is prevented on those two days from purchasing his animals alive, he is consequently driven to the carcass butcher for a supply. There is another very important circumstance, which is this, that if you had the dead-meat market retained in the centre of London, and the live-meat market two miles from it, there would be the driving of all the stock bought by the carcass butchers, to the number of 3,000 sheep and upwards, and 1,000 bullocks a-week, from the cattle market through the streets to the neighbourhood of the wholesale meat market. Again, if you had an order of things to prevent their slaughtering in the heart of the City, all this carcass stock, when slaughtered, namely, 3,000 sheep and upwards, and 1,000 beasts per week, would have to be brought down two miles to the meat market in carts, thereby

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increasing labour and expense very much. But what would be much worse than that would be the damage done to the meat, making it unfit for sale in the butchers' shops. As for instance, it would have to be brought two miles often before it is cold, and in all weathers,—in hot weather, daily; and I should say it is hardly practicable to do it in time for business purposes. first, to expose it for sale in the wholesale market, and secondly, for the butchers, after their purchases, to get the meat home to their shops in time for their customers. This, being a daily transaction, would be a source of great additional expense, and of very great inconvenience to the trade. I think such an arrangement would tend to increase the price of meat more than any other that has been considered before this Honourable Commission.

1917. Supposing such a market as you suggested in your former evidence were established near Pentonville Prison, do you contemplate the dead-meat market being in proximity with it?—Yes, in immediate proximity.

1918. Supposing the dead-meat market were held in immediate proximity with the live-stock market on the market days, how would it be if on other days it were held at Smithfield?—Such an order of things could not exist; it would dislocate all the arrangements of the trade; there would necessarily be two markets, and increased expense; the sellers would have to go from the one to the other, and the buyers would have to go some days to the one, and other days to the other. My opinion is that it could not work.

1919. Could not it work, supposing there were railway communications from the one to the other?—I do not see any possibility of making it work.

1920. What is your opinion with regard to the establishment of a market on the south side of the river?—I am decidedly of this opinion: that whether you have one, two, or three markets, the principal amount of business will merge into one. It is most desirable for the convenience and interest of all parties concerned, that we should have one great emporium for the general supply, to which the buyers may go, and see what the supply is, and make their selection. If you divided the market, I should not know where to go for my different kinds of stock. Every butcher wants various kinds of stock, according to his trade from various quarters,—some from the south and some from the north. We want Southdown sheep, and we want large half-bred sheep for family purposes. Sometimes we want small beasts, sometimes large beasts. We want live calves, and we want lambs. In fact, there is no one point of the compass from which I could get a supply of all those things. It is a general supply from different neighbourhoods which furnishes us with exactly what we want.

1921. Would not all those different supplies go to the market which was held on the south of the Thames, say on Thursday, which would afford a market for the supply of the south of London?—I do not think it probable that the stock from the north would be driven over the bridge to the south. We have a market at Croydon, and a small supply goes to that market. We have another eastward at Romsford, and another westward at Southall. Those are very convenient markets, especially to the country butchers in the immediate neighbourhoods of each respectively.

1922. Is there a market at Barnet?—Not any. There used to be a pig-market there, but I believe that has gone into desuetude.

1923. Can you give the Commissioners any general notion of the deterioration of meat generally, by travelling, and by the manner in which it is deposited in Newgate and Smithfield markets. What is about the amount of the loss on the live and dead meat to the grazier?—I do not think it possible to answer that, otherwise than in a general way: it is not attainable by any person. You cannot get at the facts, so as to assure yourself that you would be correct; but that it is very large, and that it greatly exceeds what any person not practically acquainted with the evil would believe, I have no doubt. As to stating in a round sum what the aggregate amount would be I should be fearful of running the risk of committing myself.

1924. Can you state the loss which you yourself experience from the deterioration of the meat from that cause?—I should say that the deterioration on mutton particularly, which I buy in Smithfield, is principally in the flesh, from being over-heated, which injures the quality. Only yesterday, there was one lot of 21 sheep, which I bought of Mr. Hallibrass. His man said to me, after I had bought them, "I am afraid one of these sheep will not walk home." I could not get it up to handle it; it was a very large, fine sheep, more than the average. There were two of those sheep obliged to be brought home in a cart by my drover. I have kept them alive, and managed them so as to have them slaughtered after proper rest, and what the result of the loss will be, I do not at present know, but I have often had losses of six or eight shillings upon a sheep, but that does not apply generally, it is the exception, not the rule.

[The Witness withdrew.]

J. Simon, Esq.

John Simon, Esq., examined.

1925. What office do you hold?—Officer of Health for the City of London.

1926. How long have you held it?—A year and a quarter.

1927. You were appointed by the Corporation?—I was.

1928. What are your duties?—To report periodically on all variations in the health of the City; on the circumstances determining those variations, and to advise the means of improvement.

1929. Are you acquainted with the provisions of the City Sewers' Act, with respect to slaughter-houses in the City?—Yes.

1930. In what manner have those provisions operated?—When the Act came into operation I drew up some suggestions, preliminary to the issuing of regulations by the Court of Sewers.

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One of those suggestions was, that under-ground slaughtering should be discontinued; it was found, however, that the Act would not enable the Commission to make that regulation. They were, I believe, not unwilling to make it; but the Act would not enable them to do so. So far as the clauses of the Act enable the Commission to act, namely, for the maintenance of cleanliness, regulations have been issued by the Commission, and are enforced under the constant visitation and responsibility of the Inspectors of Nuisances.

1931. You are aware that it is not now lawful to open a new slaughter-house in the City?—I am.

1932. Does that appear to you to be a good provision?—Undoubtedly.

1933. Is it lawful under the existing Act to erect a slaughter-house upon a new site?—No, under a penalty of 5*l.* for every day on which such new building shall be used.

1934. May not all slaughter-houses upon existing sites be continued?—Yes.

1935. Will not the effect of the present Act be to give increased value to the existing slaughter-houses, inasmuch as they will have a right of monopoly?—Apparently.

1936. Do you conceive that it would be competent to a person occupying a slaughter-house at present, to enlarge that slaughter-house?—That is a matter rather for a legal opinion than for mine; but I apprehend that it would be competent to such person so to do, provided only that he restrict his enlargement within the premises originally leased by him.

1937. Therefore, looking to that construction of the Act, does it appear to you that the present provisions hold out any prospect of diminishing the practice of slaughtering within the City?—Certainty not.

1938. Have you ever inspected any slaughter-houses within the City?—Yes; I have visited many of them.

1939. In what state do they generally appear to you to be?—I have never entered a slaughter-house without perceiving an offensive smell. In the majority of those that I have visited, I should say that the owners, to the best of their ability, strive to preserve cleanliness; the surface of the pavement is usually well washed; the walls are tolerably cleansed, and in the better class of slaughter-houses there is little visible filth about the place; but still, unquestionably, there remains the stench of decomposing animal matter. This is, probably, due in a great measure to the fact of the soil being saturated with animal fluids, and with the washings of the slaughter-house.

1940. Have you visited the slaughter-houses under Newgate market?—Yes.

1941. Do they differ from other slaughter-houses?—No, I think not. The chief distinction between slaughter-houses is in those that are under ground and those that are above ground. In the under-ground slaughter-houses, such as the majority of those about Newgate market and Leadenhall market, there is less possibility of ventilation than in the slaughter-houses above ground.

1942. Is the drainage of those slaughter-houses as good as of those above ground?—The fall is necessarily less, and the drainage, therefore, comparatively imperfect.

1943. Would you advise that all under-ground slaughtering should be prohibited?—Certainly.

1944. On what ground?—On the ground of the health of the public being injured by its continuance; on the ground, namely, that the defective ventilation and slower drainage of such establishments tend to aggravate evils which belong more or less to all the forms of intramural slaughtering.

1945. Has your attention been called to the unwholesome trades that are connected with slaughter-houses, such as fat boiling and bone factories, and other similar trades?—Yes; but we have very little of that sort of occupation in the City. Of bone boiling I believe there is none; of gut scraping there is.

1946. Those offensive trades are carried on just outside the City?—Chiefly so. There seems a tendency to establish them just beyond the limits of the City, in such directions as will leave them nearest to the great slaughtering places.

1947. Do you think the proximity of those trades would affect the health of that part of the metropolis?—I have no hesitation in saying so.

1948. Have you ever considered the effect of using the space of Smithfield as a large cattle and sheep market upon the health of the neighbourhood?—Yes, I have; but I have not information on the subject, which would enable me to speak very positively and exclusively about it.

1949. What is the result of your opinion, as far as you have come to any conclusion upon it?—It appears to me to be a mixed question. There are three points in it which require to be determined separately. You must distinguish between the influence exerted by the market, simply as an open space, and the influence exerted by the number of cattle that congregate there for two days in the week. This distinction is so obvious that I should scarcely advert to it, were it not that I constantly find persons overlooking it in their argument. Some speak of the market as if it were always crowded with cattle; others, as it were always a source of healthy ventilation to the neighbourhood. As an open space the market is, of course, a very great advantage to the health of its vicinity, an advantage possibly sufficient to outbalance many of the inconveniences that belong to the market as a place for assembling live cattle. As regards that assemblage of cattle within the space, during the holding of the market, it obviously reverses the advantage to which I have referred.

1950. In what manner?—In the same manner and for the same reason that a town, where men congregate in large numbers, is less wholesome than the country. Within the confined space of the market, there are collected together, twice weekly, a vast number of cattle, which discharge an immense amount of gaseous, fluid, and solid excrements. These contribute largely to pollute the atmosphere, just as human evacuations and human respiration would do

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so. The condition of the locality for the time is, therefore, (speaking physiologically) exactly what it would be, if the human population were very much denser than it is there, or in any other part of the metropolis.

1951. The excrements of the cattle, no doubt, would be unwholesome, but do you consider that the mere congregation of cattle in an open area exercises any bad influence on the health?—In large numbers, within the heart of a great town, undoubtedly it does.

1952. Do you think the congregation of a large number of men in the open air is unwholesome?—The parallel case would be this: suppose 50,000 men marched periodically into Smithfield market, and were detained there for many hours, during which they would exhaust the respirability of a large quantity of atmospheric air, and would likewise discharge solid and fluid excretions. It cannot be doubted that this would pollute the air; and, (supposing the men to have been marched up from the provinces) the *modus operandi* of their temporary occupation of the area would be the same, precisely as if the area were occupied during the same time with an unprecedented density of inhabited houses. The effect of a full Monday's market, during its holding, is as though the population of the City were *pro tempore* increased one-third, and that whole additional population were encamped in Smithfield. In either case, whether by men or cattle, the unwholesomeness of the effect on the neighbourhood results from animal overcrowding, and is a necessary consequence of that cause. I am not prepared to say, that this evil in regard of the vicinage of Smithfield market, is a very appreciable one; or rather, I should think, that it is quite counterbalanced as regards that district, by the advantage of ventilation which the open space affords at all times when it is unoccupied by cattle. I think the advantage of the open area on five days of the week, may fairly be set against the disadvantage of its offensive occupation on market days. But then comes the third point to which I have adverted, namely, the slaughtering which is practised in the vicinity of this large cattle-market, and which is unquestionably prejudicial to the health of the public. The market (as such) cannot, (I think) on the whole, be considered in any great degree detrimental to the neighbourhood. I think such evil as is done by the congregation of cattle is counterbalanced by the benefit derived from the space.

1953. Have you ever considered what the effect of the saturation of the ground by the urine of the cattle is upon the atmosphere?—Objectionable, no doubt, so far as it tells; but I may add that the drainage there is very good.

1954. You think that is likely to counteract any injurious effect?—To a great extent. Smithfield is peculiarly well situated for that purpose; it is on very high ground, and the drainage there is remarkably good.

1955. Do your duties require you to visit and inspect the localities in the neighbourhood of Smithfield where the knackers' and slaughterers' business is carried on?—There is no knacker within the city; but I have had occasion, (not officially, but for other purposes) to visit the knackers just outside the City in Sharpe's-alley.

1956. Is not the trade of a knacker absolutely prohibited within the City, by the recent Sewers' Act?—Yes.

1957. By law, at present, no knackers' establishments can exist within the City?—No; but though at present no knacker's establishment exists within the City, the offensive emanations from such an establishment pass into the City incessantly. The knacker's premises, in Sharpe's-alley, are but just outside the City boundary, and their stink does not refrain from crossing the boundary-line.

1958. Is not the effect of the present City Sewers' Act, the sanitary provisions of which are more strict than those of the Metropolitan Sewers' Act, to drive certain unwholesome trades just without the limits of the City?—I am not aware that it has acted in that manner, though such would certainly appear to be its tendency.

1959. You are not aware that any knackers' establishments were in the City previously to the Sewers' Act being passed?—No.

1960. Does your duty lead you to examine into any nuisances which may injuriously affect the atmosphere of the City, even though the sources of them should be out of the City?—I consider it a part of my duty to discover, as far as I can, and to report upon nuisances of that description; but I have no authority out of the City; and my reports on any such subject, if they relate to parts out of the City, are useless.

1961. Have you been led to inspect such centres of stench and miasmata in the neighbourhood of the City, but out of the City?—Yes, the neighbourhood of the knackers' establishments, for instance.

1962. Do any of those stench and miasmata depend upon the existence of a great live-cattle market where it now is in Smithfield, as far as you can form an opinion?—The slaughtering of sheep and oxen must mainly depend upon that; and a large proportion of the offensive trades connected with slaughtering of cattle, such as the gut-scraping, the bone-boiling, the tripe-boiling, &c., probably, will depend upon the same cause.

1963. Can you give the Commissioners any information as to the existence of such trades, and their relation to the health of the city?—As soon as you pass the City boundary, in the direction of Smithfield bars, and again, when you pass it in the direction of the new Victoria-street, you come to a space which is very full of establishments of the nature spoken of. You will observe, that this is the part outside the City, nearest to the market.

1964. What do you conceive to be the effect of those establishments close to the City boundary upon the health of the public?—I cannot doubt that they are injurious to health. I have no means of knowing, accurately, the mortality in the district, but I cannot doubt that it is high. From all I know on the subject, I conceive there would be a great abundance and fatality of epidemic and infectious diseases there.

1965. Does the progressive increase of the metropolis, attended as it is with a progressive

increase of offensive matters in the sewerage, render attention to all these causes of miasmata, more incumbent upon the authorities than formerly?—Very much so.

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1966. Did you ever visit Newgate market in the summer time?—Yes, I have visited Newgate market at all periods of the year.

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1967. Do you find it very offensive?—Yes; I consider Warwick market or Tyler's market, as they call it, to be peculiarly offensive.

1968. Has your attention been called to the Hide market which exists in connexion with Leadenhall market, and to the effect in summer weather of that market upon the health of the public?—I can hardly speak to the effect of that market upon the health of the public, because the population around that portion of Leadenhall market is thin; the houses are chiefly used as offices; and, again, the population is not a poor population: we have not, therefore, the *cætera paria* which are necessary for making a comparison of that part with other parts in a sanitary point of view; but the complaints of the Hide market are very strong, and the nuisance has appeared to me in visiting it to be of an aggravated character, especially in the summer.

1969. Will you favour the Commissioners with your views as to the sanitary principles upon which markets for the supply of London with meat ought to be regulated?—Viewing the matter in reference to the health of London, the principle, I presume, must be this: to reduce to a minimum the quantity of animal decomposition occurring in the vicinity of human habitations; to bring into the metropolis no more than is needed for consumption as an article of food; to bring in nothing for the purposes of manufacture,—no hides, bowels, or the like; to exclude all such manufactures from the City: in other words, to slaughter outside the metropolis (beyond the limits of dense population), and to bring into the metropolis only that meat which shall be eaten.

1970. In fact, to deal with meat in the same way as we deal with bread—not to bring the raw corn into the City to be ground, but to bring in only that which is to be used for food?—Precisely.

1971. Is there not this difference between meat and flour, that the one is independent of the effects of temperature, while the other is not?—Yes, and there is the great difficulty of the subject. On purely sanitary grounds, the great object would of course be to have the large slaughtering processes as far as possible from human habitations; but on other equally practical grounds, it is obvious that the object can only be sought for with certain qualifications. The slaughtering should be as remote from our inhabited streets as possible, consistently with the requisite facilities of communication between the slaughtering establishments, on the one hand, and the butchers' shops on the other; this freedom of communication being indispensable to the convenience of the public.

1972. Would you propose absolutely to prohibit all slaughtering within what may be called the limits of the metropolis?—Speaking merely on sanitary grounds, I would unquestionably do so; but, as I have suggested, there is another condition which must be fulfilled. The public must be supplied with meat at a certain price. Supposing the supply of meat could be as complete as now, and its quantity as nicely proportioned to the demand, and without any increase or any large increase of price, I should certainly say all the slaughtering ought to be without the limits of the metropolis.

1973. Do you think any difference could be made between the slaughtering of sheep and the slaughtering of oxen?—No; I believe that at present it is illegal under some old statute to slaughter horned cattle within the City of London, but I have never thought it worth while to use the power which that statute apparently has given to prohibit one kind of slaughtering, while all other kinds should be suffered to continue.

1974. What is the law to which you refer?—I cannot refer to it distinctly; I know it only from hearsay, or perhaps from some vague reference in print, to the effect that there is a statute affixing a penalty, I think, of 8*l.* to the slaughtering of an ox within the City of London.

1975. Do you think it would be, in a sanitary point of view, useful that slaughtering in the City should be prohibited, but should be allowed in the other parts of London?—Whether that would be equal justice is perhaps another matter; but useful, in a sanitary point of view, it of course would be to those parts of the metropolis that got rid of the slaughtering, and *pro tanto* it would be desirable.

1976. That is, that the slaughter-houses should be removed out of the City to the districts around?—If all the slaughter-houses were moved out of the City and ranged in a ring round about it, of course the advantage would be none; but if they were removed from the whole of the metropolis the advantage would be very great.

1977. If slaughtering were prohibited, would it not be also, on the same ground, necessary to prohibit the unwholesome trades which have an affinity with slaughtering?—They would, I think, vanish of their own accord with the slaughtering; they would follow the slaughtering; otherwise it would certainly be necessary to prohibit them, for they constitute one of the great evils of slaughtering.

1978. Can you state how many of those establishments, which you consider prejudicial to health, exist?—I cannot tell what number there are out of the City, but there are very few within the City.

1979. You are acquainted with the slaughter-houses in the City, in Newgate market, and in Leadenhall market. Do you happen to know as a fact whether they do cause any greater degree of illness than exists in other parts?—It would seem to be very easy to answer that question by a "Yes" or a "No," but I cannot answer it quite easily, and for this reason: the causes of illness are very much mixed up together. We generally have those slaughter-houses in the midst of a very poor and very crowded population; and if a fever breaks out in

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such a population, and carries off a large number of persons, we cannot impute it solely to the slaughter-houses.

1980. Since you have been officially employed in the City, have you observed in those parts of the City in which slaughter-houses exist a greater degree of illness than prevails in other parts where there are no slaughter-houses?—If you take a private slaughter-house in a district which otherwise is not an unhealthy one, I think you do find that that forms a sort of centre for epidemic diseases; but the influences which cause diseases are so mixed up together that I do not like to speak very positively about it. For instance (when you get out of the great slaughtering district, in Hosier-lane, there is a slaughter-house close to Diamond-court; there is a great deal of illness about there, and that is on high ground, and in a situation which otherwise perhaps would not have a great deal of epidemic disease. So again, when you come to Farringdon-street (it is true that the Farringdon-street district itself is not a healthy one; there is often a great deal of illness there, and the cholera raged there very fiercely), at the top of Bear-alley, which is on a higher level than the line of Farringdon-street, there is a private slaughter-house, very ill regulated, and, whenever I have been there, exceedingly offensive. Where Bear-alley joins Seacoal-lane there were several cases of cholera, and there is a great deal of fever and a great deal of ill health generally in that neighbourhood. Again, nearer to Smithfield, in Fox and Knot-court, there is a large public slaughter-house, and there is a great deal of illness there; but then it may be noticed that other causes of ill health exist here, just as in the other place which I have just cited. In Leadenhall market there is not much disease about, nor in Newgate market, but then the population is not dense in either of those situations.

1981. Do the people who carry on business there live there?—I apprehend very few, and that makes a very considerable difference in the result.

1982. Did any cholera cases come under your cognizance in the immediate vicinity of Smithfield market?—Very few indeed; in the workhouse there were some cases. It is remarkable, however, that that workhouse is in the middle of a slaughter-house district, and it had not so many cases of cholera as the workhouse in the East London Union, where the cholera was exceedingly bad. That does not to my mind prove the healthiness of a slaughter-house district, because there are other causes mixed up in the comparison of the two establishments; probably, the circumstances of the houses are different, in addition to their difference with respect to proximity to the slaughter-houses.

1983. Are you aware, whether in St. Bartholomew's Hospital there were any cases of cholera over and above those which were brought into the hospital with that disease; that is, whether there were any cases of cholera among the nurses or other officers of the hospital?—There were several cases reported of deaths from cholera in St. Bartholomew's Hospital, where no other address was recorded; so that apparently nurses and other servants of the hospital must have died from cholera. In Wild's map of the City (one similar to this) I have marked every house which was the registered residence of a person dying from cholera, and there are several cases marked against St. Bartholomew's Hospital.

1984. You have given it as your opinion, that intramural noxious trades, such as tallow-melters and gut-scrapers, and so on, would of themselves follow the slaughter-houses out of town, if the slaughter-houses were compelled to be out of town, in its neighbourhood. Do you think, that the slaughter-houses would in any degree follow the live cattle market, if the live cattle market was by law compelled to be extramural?—I should think not; I am told by those who are better informed on the subject than I can pretend to be, that the slaughtering establishments will tend to settle themselves in immediate proximity to the dead-meat market rather than the live-meat market; and this view appears to me quite rational and probable.

1985. We have, however, had it in evidence, that some of the cattle in Smithfield market are considered to be in such a state of deterioration as to render it desirable that they should be slaughtered on the spot, or as near it as possible. In that case, one sees the relation between the live cattle market and the slaughter-houses, and so far as that or the like relation may exist, the removal of the live cattle market out of town would be attendant with the removal of the concomitant nuisances connected with slaughter-houses. That would be agreeable with your opinion and observation?—Yes; if the butcher could conduct his business according to his own view of convenience, unshackled by considerations of expense, probably, in every case he would have his slaughter-house close to his shop and kill for his customers, from hand to mouth, just according to the hour's demand. He would have on hand as little dead stock as possible, so as to diminish, especially in summer, his risk of loss from decomposition. And the same apprehension, acting more generally, would lead, as I should infer, to the settlement of the slaughterers in immediate proximity to the dead-meat market.

1986. So far as slaughter-houses and their attendant noxious trades are inimical to the public health, and so far as they are more immediately connected with the dead-meat market, than the live-meat market, on sanitary grounds would it not be more important that the large dead meat market for carcasses should be out of town rather than the live-cattle market?—That appears a fair conclusion from the premises which you state.

[The Witness withdrew.]

Mr. W. Eve.

Mr. William Eve examined.

1987. You have a large farm, have you not?—I have a farm of between 600 and 700 acres at North Ockenden, near Romford.

1988. Do you send to Smithfield market a considerable number of beasts in the year?—

Yes, I do. I send about 180 beasts annually to Smithfield, and from about 30 to 40 to Romford. Romford is our local town, and I send about 800 sheep and lambs to Smithfield and Romford.

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1989. Were you not a salesman in Smithfield market for many years?—Yes.

1990. For how many years?—From the first of my going into Smithfield market, and being intimately acquainted with it, is now 33 years.

1991. You were a salesman there?—Yes, for nearly 20 years: and I stood there twice every week for 17 years, with scarcely an exception. I was not taken ill, or out of the market more than twice out of 104 days in the year, and I slept in the market 101 nights in the year for 17 years, so that I came in at all hours of the night, and of course had an opportunity of seeing a good deal of the progress of the market in the night as well as day.

1992. Was that progress replete with cruelty and objection?—There was a great deal more cruelty in the commencement of my career than there is now; there has been a great amelioration since I first knew the market, but still not sufficient to meet the claims of humanity.

1993. Do you look upon the market as inadequate in size for the wants of the public?—Yes; I have advocated that for many years before the Committee of Inquiry took place; I always found fault with the room that was provided, as being extremely insufficient.

1994. Do you consider that there is a deterioration of the cattle that come into the market, from the want of space?—Decidedly I do.

1995. Can you give the Commissioners any idea of the nature and amount of that deterioration?—I think the amount of deterioration is very considerable, arising from the irritation and excitement which the animals are subject to, and in being pressed into the pens so closely as they are. In the first place the sheep, and then the cattle, from being jammed, not only to the rail but also in the droves, the meat must be very much deteriorated in value; and also from the irritated and excited state produced in the animals they must sink very fast, and of course lose flesh to a very considerable degree; so much so that, if you calculate the number of sheep which are sold annually in the market at 35,000 per week, I have no hesitation in giving it as my opinion, that the loss consequent upon that injury and excitement which they are subject to in the market is equal to 4 lbs. per head.

1996. What should you say the loss was upon cattle?—Of course the loss upon cattle is in the same proportion; and I should imagine upon the beasts, taking a fair principle, the loss consequent upon the ill treatment they receive would be 2 stones, or 16 lbs. a head. And then there is the preliminary matter of the animal coming to market, which of course commences this waste of meat; and it is brought to a climax by the treatment they receive there.

1997. Does it come within your practical knowledge, that the animals do waste to the extent you have stated?—Yes; I can give a practical proof of it. When I was a boy, I served my time as an apprentice to a butcher near the metropolis; my master used to bring me with him to market, and perhaps he would buy two or three beasts and ten sheep, or more; and if he wanted to kill any of them in the afternoon, he would say,—“Now, William, you may as well drive these home; the drover will assist you out of the market; and when you get them home, you can kill part of them.” If I was ordered to kill five or six sheep on the Monday night, and to kill the remainder on the Thursday or Friday, I invariably found that the sheep that were killed on the Thursday or Friday were considerably reduced in weight, as compared with those that were killed on the Monday. Whether I picked out the biggest or the least, or never picked them at all, that was always the result. I think that proves a great deal; not only that the meat was deteriorated in value, but that it lost a great deal in quantity.

1998. You mean to say that a lot of sheep, sold by you at Ockenden to a butcher, would sell for more than they would sell for after being driven to Smithfield market, and subjected to the treatment they receive there?—They would be worth more to the butcher, supposing he could come and buy them there and take them quietly into his slaughter-house; there would not be, in that case, the loss sustained by the butcher which he now sustains.

1999. The same would be applicable to oxen?—Decidedly.

2000. Did you ever form a calculation of what would be the difference between the value of a beast at Ockenden and its value in Smithfield market?—If I were a butcher, instead of a farmer, I would give from 10s. to 20s. more for a beast, buying it at a farm house to be delivered at my shop in a proper state, than I would give if the beast were subjected to the ordeal of going through Smithfield market.

2001. Cannot the butchers now buy their meat in the country if they wish to do so?—Yes; but very few farmers know their business, and the butchers are not very fond of going away from Smithfield; they find that the place to buy at. But I know, as a fact, that one large butcher, Mr. Slater, is a large buyer of beasts in the country. I know that he has bought sheep of a person that I was in the habit of selling for. I know that he went down to a friend of mine in Essex, in order to buy a lot of beasts at Christmas time. Whether he bought them or not I do not know. He would not purchase in the country if it did not answer his purpose.

2002. At what should you put the difference in the value of the sheep sold in the country and the sheep sold in Smithfield market?—I should say it would make a difference to the butchers of fully from 1s. 6d. to 2s. a head, or more, which would amount to upwards of 100,000% upon the sheep alone.

2003. Do you think the proximity of the live and dead meat markets, wherever they are, is absolutely necessary?—No, I do not think that it is absolutely necessary. I believe it is an advantage to a certain extent, but not such as to prevent the change which is absolutely necessary in the removal of the market from Smithfield. The benefit of removing the cattle and sheep market would, I should say, far counterbalance the inconvenience or loss on the other side.

2004. Do you not apprehend that it would be better if the two markets were near one another?

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—I think it would be better that the two markets should be near each other, but not absolutely necessary, as far as I am able to judge.

2005. Do you consider lairs to be absolutely necessary to be appended to the market?—I do; I have always felt a strong wish to see that desired end.

2006. If such an arrangement could be made, do you think it would benefit the grazier very much?—Yes, I do. Smithfield market is like other markets, it is sometimes glutted; there is more than the trade require. But in my experience I always found that it was best to sell at the first market, for I found that nineteen times out of twenty I sustained a loss by keeping the animals for another market, even though from the then state of the trade there was an apparent loss to the grazier by selling them on that day.

2007. From what did the loss which was sustained by keeping the animals arise?—The loss arose from the depreciation in the article itself; the reduced flesh, and the want of solidity and firmness which is necessary when the butcher purchases to suit his palate.

2008. That would be obviated by proper lairs being appended to the market?—Very much so; and on the score of humanity it would be most desirable to bring about that result. When I was an active man in the market I had not time to look at what was going forward; my business took up the whole of my thoughts and time; but now I go most Mondays, and sometimes on a Friday to the market, and I am a passive spectator of all that is going on. I see the difficulty, and the brutality and inhumanity which are practised there, and I endeavour to take a calm and dispassionate view of everything around me. There was one thing which struck me very forcibly which I saw some time ago. Whilst I was standing in the market there was a funeral coming along Long-lane, and a bullock had unfortunately turned the wrong way, up Long-lane instead of the other road. A dog ran at his nose, and the drover threw his stick at his head to prevent him going the wrong way; but it was with the greatest difficulty in the world that they prevented the animal from knocking down the bearers of the corpse. I was all in a tremor for fear that that should occur, and that the coffin should be thrown upon the ground. And another thing I may state, of which I took the particulars at the time. On the 8th of October there was an arrival of a large number of foreign beasts—as many as 1,400—which swelled the amount which they had in the market to a great extent. The trade was very bad. I went into Smithfield at half-past ten. I said to a drover, “You have a large quantity of foreign cattle to-day, how many have you?” He said, “1,400.” I said “I suppose you have got them all in?” He said, “No, we have not got them all by 500.” That was at half-past ten, and at half-past two I met some that were just going in; and the reason which prevented them coming in earlier was the insufficiency of room. Now, whether they are English or foreign cattle, if we have a public market, I think the foreign should have the same privileges as the English; but at present they are debarred the opportunity of being exhibited in the proper market at the proper time.

2009. Do you believe that the foreign cattle have a preference given them over the English?—No, I do not see that at all.

2010. Do you happen to know whether several of the salesmen are connected with the foreign markets?—I should think some of them are. I should imagine they are connected with the foreigners who ship the cattle.

2011. They have, then, a greater interest in selling the foreign cattle than they have in selling the English?—No, I do not think that. I think it is a very fair market; it is conducted on very honourable principles; there is no want of honour or integrity on the part of the salesmen, or money-takers, or any one else connected with it.

2012. But if a salesman is connected with cattle, whether in this country or abroad, of course he desires to sell those beasts in preference to those with which he is not connected?—Yes, but if the English producer found that the salesman to whom he sent his cattle was not paying the attention to his beasts that he required him to pay, he would not continue to send his cattle to him.

2013. But is it not practically the case that there are salesmen who have an interest in selling foreign beasts?—I think it is probable that it may be so, but as I cannot speak to the fact, you will take my answer in a qualified sense.

2014. Have you made any calculation of the amount of loss to the cattle or sheep, owing to the confined area of Smithfield and Newgate markets?—If you multiply the number of sheep that are sold in a year, 35,000 by 4, each sheep losing 4 lbs., it comes to a fearful sum, as I have before stated, a considerable sum of money more than the public ought to lose; and every half stone that is lost by any want of care, or by any bad system, must recoil upon either the producer or the public, and my motto is, “waste not, want not.” There is a singular case which I may perhaps mention:—A gentleman in Lincolnshire endeavoured to test the thing in this way: he took 20 sheep and weighed them, and if he found any that were of a greater weight than the others, he took those away and put the lighter ones, so as to get 20 sheep to correspond in weight as nearly as possible; 10 of these were consigned to London, and killed there, and the other 10 were killed in the country, and sent up dead, and the difference in the weight was enormous; it would frighten any one to hear what the difference was. The loss I have since ascertained to be from 12 to 14 lbs. per sheep.

2015. You say that the space in Smithfield market is insufficient. To what extent do you consider the area of Smithfield market insufficient?—It is allowed on all hands, and I believe every person will admit the fact, whether he be a salesman or a money-taker, or any other person connected with the market, that the present size of the market is too small. I may perhaps be allowed to make a remark upon that:—In my experience, for many years improvements have gone on. I remember “The Old Bell” standing, and its being pulled down, and I remember “The New Bell” being put up, that is now pulled down; that was done to give increased room, but in every improvement the City have made (and I give them all credit

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for the improvements they have made), they have fallen far short of the requirements of the public; for instance, in 1825 the public wanted room for 5,000 more sheep, and the City gave room for 2,000, and in 1835 the public wanted room for 7,000 more, and they gave them room for 2,000. This I have closely watched as the years have gone on, and to show that the sheep are not all sold in the market, I may perhaps be allowed to state that in last April I went to the Ram-yard, and in one of the lofts connected with that yard I bought 140 sheep. They never went into the market at all. They were never exhibited in the pens.

2016. Do many sheep stand in the yards of the inns adjoining Smithfield?—This is one proof of it, and I believe there are a great many, for I saw a great many cattle and sheep in the yard at the time I went to purchase those.

2017. Did you ever observe cattle and sheep on any other occasion standing in the yard?—Yes; I have had more than I have had pens bespoke for. I have been obliged to take them to the Ram-yard, and bring them into the pens where there was room for them. The sheep that come first to the pens that are allotted us, must go into them, whether they suit the west-end butcher or the east-end butcher, and the consequence is, that frequently the best sheep are left out of the pens, and a serious loss is sustained by selling at the latter end of the day to the east-end butchers those sheep which the west-end butchers would have been glad to purchase, if all could be exhibited at the same time.

2018. Do you pay toll upon sheep which are not sold in the market?—Yes; they all pay toll.

2019. Would sheep for sale in the yard of an inn pay toll?—I do not know whether those pay toll, or not. I should imagine that they did not, but that is a question to be sifted by the Corporation. There is another thing I would mention: I have some land at Plaistow, and it would be a great advantage, not only to myself, as a grazier, but to other Plaistow graziers, if we could go to the market and buy cattle which are sometimes sold there half fattened, but we dare not purchase them now, on account of their being footsore and diseased. They are a fortnight or three weeks before they get over their journey and rough treatment, and that completely prevents our buying them for that purpose; and though I might wish to relieve the market by taking a portion of the goods which are absolutely in the way, and in that way produce an increased quantity of meat for human consumption, I cannot buy them, and with sheep it is the same.

2020. Did you ever attend Smithfield market on the night of Sunday?—I have been acquainted with it so thoroughly, that I should think no salesman has seen so much of night-work as I have done, for I have been myself, frequently, and seen the cattle tied up, and the sheep penned.

2021. What have you observed?—I wish I had words to convey my ideas upon the subject, but I have not; but it is a scene which beggars all description. The bad language, and the brutality, and everything else met together, would horrify anybody. Use is second nature, and I had got used to it; but now I have time to contemplate the things which take place in the market, and I have very often been shocked by the language and the brutality. I have sometimes taken pains to reprove the parties, and have threatened to bring them up before a magistrate for their brutality, but my living in the country prevented it; but I feel that I have not done my duty in not doing so.

2022. Is that cruelty exercised on the animals?—Yes.

2023. Both the oxen and the sheep?—Yes.

2024. Which do you think suffer the most?—Heavy sheep suffer the most—the Lincolnshire sheep; for they are least able to get out of the way, and in the pens frequently lie upon each other.

2025. Is the cruelty necessary, in order to bring the cattle and sheep to the places where they are to stand?—Great part is indispensable to force the animals into the confined space allotted them, and the constantly employed become brutal by habit. I speak practically, for I have driven out of the market, and know the business in all its ramifications.

2026. Supposing the site of the market were changed, do you think there would be so much cruelty as there now is?—No; I think it would be under a different system altogether, and there would be proper persons to exercise a judicious surveillance, to prevent that brutality and inhumanity which are practised there, and which is a blot upon our age—a disgrace to the City.

2027. Might it be prevented?—Yes; it could not possibly be prevented in Smithfield.

2028. But, supposing Smithfield were enlarged to a considerable extent, might it be prevented?—If it could be enlarged to a great extent you would not do away with the inconvenience which the City of London undergo from the cattle being driven backwards and forwards in the day-time. I will give an instance:—a sort time ago I was outside an omnibus coming down Ludgate-hill, and just as we got opposite to the late Mr. Waithman's old shop, a drove of sheep came under our horses' noses from Farringdon-street; the horses were pulled on to their haunches, and we were stopped; that stopped all the carriages coming down Ludgate-hill and up Fleet-street, and all this inconvenience arose from those 40 sheep. I said to the coachman at the time—"This is one of the fruits of sheep being driven through the City in the day-time, and if anybody was going to the railway in a cab, what a situation he would be in from this delay;" he would be likely to be too late.

2029. To what extent do you think the market should be enlarged for cattle and for sheep?—I think it could hardly be too large, to give ample accommodation for the lairage, which is one great thing that I wish to see accomplished; 30 or 40 acres would be useful, because, if you have space, it is not necessary to fill all that space.

2030. How much larger should the market be than at present in order to afford standing-

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room to the cattle and sheep?—It might be done with double the space, but then you would have to fall back, some few years hence, upon the same difficulties that you have now.

2031. You think it might do, if the market were as large again as it is at present?—Yes.

2032. But you think there ought to be lairage?—Yes.

2033. And for that purpose it would require 30 or 40 acres?—Yes; to give space for the cattle, which seem to be augmenting annually.

2034. But that would not obviate the inconvenience of driving through the streets, to and from the market?—No; unless you have a regulation limiting the driving through the streets to certain hours, which might easily be carried out. I do not see any occasion at all for driving them through the streets in the day-time.

2035. It was given in evidence in 1849 that, "Every arrangement which produces over driving, irritation, terror, and torment to the beasts, before the final blow is struck, deteriorates in the same degree the qualities of their flesh as human food, and especially its property of resisting decomposition." Is that consistent with your experience?—Nothing can be more true or correct than that.

2036. That is not a mere theoretical statement?—I have never heard anything that was more clear and satisfactory to my mind, and it embodies my own sentiments as a practical man. I am in the habit of killing my own sheep, and sometimes in the hottest weather in the summer, and I have had mutton at the end of seven days as sweet as at the end of the first day; and I have sold sheep of the very same description in Smithfield market, and I have heard the butchers say that they have been green in 24 hours. There is immense loss consequent upon that to the community, and which, I think, ought to be saved in some way or other. Meat killed in an excited state is not only flavourless, but not nutritious.

[The Witness withdrew.]

Mr. J. Thomas.

Mr. James Thomas examined.

2037. Are you an occupier of land in the county of Bedford?—I am.

2038. Where do you reside?—At Sidlington.

2039. Have you a considerable farm there?—I occupy about 740 acres.

2040. Are you in the habit of sending cattle to Smithfield market?—Yes, occasionally.

2041. Do you employ a salesman there?—Yes.

2042. By what means do you send them up to London?—Till last Christmas they always walked; since last Christmas I have sent them by rail.

2043. Do you find that mode of transit preferable?—I think it is preferable in the winter time, on account of their keep on the road being inferior to what they are used to, and therefore they lose weight by being three or four days on the road.

2044. What is the cost of sending up an ordinary sized bullock?—7s., and 4s. we pay as commission to the party who sells them, making 11s.

2045. Have you ever had occasion to consider the influence of the present state of the Smithfield market upon the country grazier?—I have taken considerable notice of it.

2046. What is your opinion upon that subject?—My opinion is, that the animals are very seriously injured from the very confined space of Smithfield market, and the almost unavoidable force and cruelty which is obliged to be used to get the sheep and the oxen into their respective places; they are often damaged very considerably, and the prices they fetch in consequence are not equal to what they would have fetched had they not received that damage.

2047. Does the damage arise from the confined area of the market, or from its central situation?—I think it arises chiefly from the confined state of the market, as far as I am able to judge.

2048. Would whatever evils you complain of be removed if a market were established near the metropolis, of what you would consider a sufficient size?—The objections would be very much reduced, if the market were double its present size.

2049. Do you observe any difference with respect to cattle and sheep?—No; I have been an attentive observer of what has occurred in Smithfield for many years, and the cruelty which is necessarily practised there applies to cattle as well as sheep.

2050. Do you believe the cruelty to be necessary from the want of space in the market, or do you believe it to be wanton cruelty arising from the bad habits of the drovers?—I think it is unavoidable, in a great degree.

2051. Did you ever calculate the loss upon the beasts, arising from the facts you have stated?—In crowded markets, like that of Smithfield, I should say the loss was not less than 1d. a-pound in value, as compared with the price the butcher would have given in the country if I could have delivered the animals at their door.

2052. Does that apply to sheep as well?—Yes. A friend of mine, a butcher in London, tells me, that the reason why he buys principally in the country of the farmers, instead of in Smithfield market, is on account of the state in which the backs and loins of the animals that come out of Smithfield market are, owing to the biting of the dogs and the blows that they receive.

2053. Did you ever send up cattle to Newgate market?—Never regularly; when we find any fat ox which is obliged from accident to be killed, he is dressed by the country butcher and forwarded to Newgate market; that is the only case in which the grazier sends killed meat to Newgate market.

2054. Do you think it would answer to the grazier to slaughter his own animals, and send them up as dead meat to London?—No, I do not. January 23, 1850.

2055. You are aware that a large supply of dead meat comes up from the country?—Yes, I am. Mr. J. Thomas.

2056. Is there any difficulty when the weather is cold in sending up the meat in a perfectly sweet state?—There is no difficulty I should say in the winter time.

2057. Do you think it necessary that wherever the live-cattle market may be, there should be a good lairage appended to it?—It certainly would be a very great advantage.

2058. A very great advantage to the grazier?—Yes, and the butcher. I think the lairs at Islington are as good as anything can be; the cruelty and damage which the beasts sustain is in driving them from the lairs during the Sunday night, and the miserable state in which they are when they are tied up during the whole of Monday, or till they are sold. Could they be tied up near the lairs, I should say the value of the meat would be increased fully 1d. a-pound.

2059. What number of beasts do you generally sell in the year?—My average during the last 15 years has been 145 beasts.

2060. What number of sheep do you sell in the year?—About 800.

2061. Do you think it would be a great advantage if there were a railway communication to the live-meat market?—I think it would.

2062. Is there much damage to the beast after it leaves the railway?—Yes; it is after it leaves the railway, and after it leaves the lairs in which the animal lies on Saturday night and Sunday, that the injury commences.

2063. Have you thought much upon the subject of the change of the day of holding the market?—Yes; as far as morals and a due observance of the Sunday are concerned, there can be no doubt that the day ought to be changed; because the salesmen and their helpers occupy their Sunday morning in valuing and pricing the different beasts and sheep which are consigned to their care. I think, all the graziers whom I know in Bedfordshire are unanimous in a most earnest wish to see an alteration of the market.

2064. That is to say, they would wish the cattle market to be removed from its present site to a more spacious site?—Yes.

2065. Have they any opinion upon the subject of the dead-meat market?—I have never heard any opinion expressed by them upon that subject.

2066. Do you think that the dead-meat market should be contiguous to the live-meat market?—I do not see any absolute necessity for it; it might be convenient to some butchers. I should say, that if we had another market for foreign beasts near the water-side, held on a different day from the other market, it would be a very great improvement, instead of driving them through the City to mix with our own beasts, by which means the diseases of small-pox and pleura pneumonia among the cattle have been brought into the country. All the graziers that I have spoken to on the subject are of opinion that it would be an advantage to have them in a separate market.

2067. Why would you propose that the foreign beasts should be separated from the English beasts?—On account of the diseases which they bring with them. We never had pleura pneumonia among our cattle till it was introduced by foreign cattle.

2068. Is there not another reason for having a separate market for foreign cattle; namely, that if there were a separate market for foreign animals, lean stock would be sent here from abroad which it would be very desirable to have in this country?—Yes. I think that is another reason.

2069. Those are not sent now?—No.

2070. Is your recommendation, with respect to a separate market for foreign cattle exclusively, founded upon quarantine reasons?—It is founded principally upon quarantine reasons; but I think the division of the market would be convenient for the butchers: those butchers who are living in the neighbourhood of the Thames would find it convenient to have a market near them. One great difficulty which we have in Smithfield is, that the room is so confined, and the beasts that are consigned to the salesmen there are so crammed together, that they cannot be seen by the buyers to proper advantage.

2071. Does not that arise from the want of space in the market?—Yes, it does.

2072. Assuming that sufficient space could be obtained, do you see any reason why healthy foreign sheep and cattle shall not be sold in the same market with English sheep and cattle?—In that case no reason but quarantine reasons would apply.

2073. If the option were given to importers of foreign cattle to send them to the principal market, probably they would decide in favour of sending them to that market?—I think it is very likely they would with fat beasts; but if we had a separate market for foreign stock, I think it would encourage the importation of lean stock to an extent that does not take place now.

2074. Would you propose the entire prohibition of foreign cattle from the principal market?—My idea certainly was, that the foreign cattle ought to go to a separate market.

2075. Do you consider that the foreign grazier would regard it as fair if he were so prohibited?—If there was a distinction between the markets, I do not see that there would be any unfairness in it; the foreign cattle are now easily distinguished from the English; there is no disguising a foreign beast so as to make it pass for an English one.

2076. Have you been led to form any opinion as to the most eligible site for an enlarged live-meat market?—I have always had a very favourable opinion of the market which was built by Mr. Perkins, at Islington. I have been there very frequently, though not the last two years, and I thought there was every convenience for the animals that could be conceived.

2077. Is it not wet?—I have never observed it.

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2078. Is it not excavated?—The Balls Pond Road is rather higher than the market; but the market is perfectly dry. I think they have dug out brick-earth, but I am not certain. It appears to me to combine every requisite that is wanted.

2079. You have not any interest in the market?—None whatever.

[The Witness withdrew.]

Mr. W. Ternouth.

Mr. W. Santler, jun.

Mr. William Ternouth, and Mr. William Santler, Jun., examined.

2080. You are Inspectors of Pavements, under the City Sewers Act?—(Mr. Santler.) We are.

2081. How long have you been appointed inspectors?—Four years.

2082. Did you act before the passing of the existing Sewers Act?—Yes.

2083. Is it your duty to inspect slaughter-houses in the City?—(Mr. Ternouth.) Yes.

2084. What slaughter-houses have you inspected?—(Mr. Santler.) I take the Eastern Division—Aldgate High-street and Leadenhall.—(Mr. Ternouth.) I take those round Smithfield and Newgate markets.

2085. How many slaughter-houses are there in the neighbourhood of Smithfield and Newgate markets?—I cannot tell how many there are in that locality; I have 70 in my district, which runs from Aldersgate-street to Temple-bar.

2086. How often do you inspect the slaughter-houses?—Those about Ram Inn-yard and Fox and Knot-yard I generally look in at two or three times a-week.

2087. Are those above ground?—Yes.

2088. In what state are they usually kept?—They are kept, generally, very clean—they are very different from what they were when I first visited them.

2089. What was their state when you first visited them?—They were very uncleanly; now they are good.

2090. When you enter a slaughter-house, do you perceive an offensive smell?—No; it may be offensive to some persons—I do not dislike it, myself.

2091. Is it such a smell as to an ordinary person would appear offensive?—In summer-time, in very hot weather, it would be.

2092. How are the blood, and the entrails, and the offal of the cattle, removed from the slaughter-house?—(Mr. Santler.) The blood is collected in pits, termed blood-holes, and sold, and the offal is taken away immediately after the beast is slaughtered.

2093. Where is it taken to?—To the tripe-boilers.

2094. What proportion of the slaughter-houses which you visit are above ground; and what proportion are under ground?—(Mr. Ternouth.) I should think one-third of mine are under ground.

2095. Is there not a great deal of slaughtering in cellars in Newgate market?—Yes.

2096. Do you visit them?—Yes.

2097. In what state are those?—Some are very good, and some very bad, for want of ventilation, more especially those in Tyler's market; they are in vaults.

2098. Do you observe any difference between the above-ground slaughter-houses, and the under-ground slaughter-houses?—The above-ground slaughter-houses are sweeter than the under-ground slaughter-houses are.

2099. Is the ventilation of the under-ground slaughter-houses inferior to that of the others?—Yes.

2100. How is the drainage?—The drainage is good in all cases.

2101. Have you ever had occasion to report any slaughter-house as being improperly kept?—No; any evils are generally remedied by my calling their attention to them.

2102. Have the Commissioners ever taken any proceedings against the occupier of a slaughter-house, under the powers of the Act?—(Mr. Santler.) They have given them notice to drain and carry out the provisions of the Act, which has been done under our superintendence.

2103. Do you see that the regulations made by the Commissioners are carried into effect?—Yes; we do.

2104. Are they punctually observed?—Yes; more particularly in Aldgate market, which used to be a very filthy place; now it is comparatively clean.

2105. Do you know the number of sheep slaughtered in the week in Newgate market?—(Mr. Ternouth.) No; I do not.—(Mr. Santler.) In Whitechapel market there are from 2,500 to 3,000.

2106. Which are the slaughter-houses which do the most business?—Those at Aldgate High-street—it is the largest beast slaughter-house in London; they slaughter about 800.—(Mr. Ternouth.) Fox and Knot-yard is the largest beast slaughter-house in my district.

2107. Has not the Ram Inn a large slaughtering-place?—They have only two slaughter-houses there—one for beasts, and one for pigs; in fact, there are only six slaughter-houses where they kill beasts in my district.

2108. Have you observed that slaughter-houses are injurious to the health of the neighbourhood?—No.—(Mr. Santler.) In the neighbourhood of Aldgate market I did not hear of a single case of cholera, and the people are generally healthy and free from disease; they do not look so ruddy as some others, but I do not hear any complaints, and I am about all day long.

2109. The slaughter-houses are in that neighbourhood?—Yes; respectable persons do not

like to have the slaughter-houses near them, and for this reason—that the drovers, driving their beasts in, use language that is very offensive.

2110. Is the driving the animals through the streets attended with danger?—I do not think it is; I never see any accidents occur.

2111. Is the blood-hole regularly emptied?—It is emptied twice a-day, very often; the butchers get 3d. a head for the blood of every beast that is killed; so that it is to their advantage to empty it as soon as possible.

2112. Is it cleaned out after it is emptied?—Yes; they would not leave anything in, because they get 3d. a head for the blood of every beast, and immediately after it is slaughtered, the slaughter-house is washed down; they have an ample supply of water, and they are all well paved and well drained.

[*The Witnesses withdrew.*]

Adjourned.

WEDNESDAY, February 6, 1850.

GEORGE CORNEWALL LEWIS, Esq., M.P., in the Chair.

Thomas Dunhill, Esq., C.E., examined.

2113. Are you a civil engineer?—I am; I have also taken a very active interest in sanitary matters as a member of the Committee of the Health of Towns, and several other associations having for their object the social and sanitary amelioration of the metropolis and towns population generally.

2114. Have you directed your attention to the subject of a metropolitan cattle-market?—I have, more or less, for the last twelve years, regarding the subject as a kind of legacy from my friend the late Mr. J. Mills, who, in connexion with Mr. Telford, mainly supported the inquiry instituted in 1828, and with whose valuable evidence on that occasion the Honourable Commissioners are doubtless well acquainted. I have, since Mr. Mills' decease, from a deep-rooted conviction of the evil, endeavoured in every possible way to attract and fix public attention upon this nuisance by means of pamphlets and papers published in popular serial magazines, &c., and have very freely expended time, means, and labour in gathering information, and in preparing numerous plans, including surveys of the present market, designs, and models of new cattle-markets, together with public and private abattoirs, dead-meat markets, &c., &c., arranged certainly upon improved, and I conceive correct principles; indeed I believe I am the only member of my profession who has taken up this question on any extensive grounds. I was examined very fully before the Select Committee of the House of Commons, in 1847, and have since taken a great deal of interest in this question. I attempted to revive that committee in the following year, 1848, and in the course of communicating with the chairman of that committee, I was honoured with the following letter:—

DEAR SIR,

July 12, 1848.

I HAVE received yours. The session is so far advanced that I am quite aware of the impolicy of now attempting to revive the Smithfield Committee. I am not surprised at your being anxious about it when I recollect the zeal you manifested on the occasion last year, and the very neat models you exhibited. I am still of opinion that this nuisance ought, for the benefit of society and the credit of the country, to be abated.

I have the honour to remain, dear Sir, yours faithfully,

(Signed) WM. ORMSBY GORE.

2115. Do you retain the opinions you expressed before the Committee of 1847?—They have been doubly and trebly confirmed since that period; Smithfield cattle-market, and its concomitants, slaughter-houses, bone-crushing, blood-boiling, tripe, and gut-spinning manufactories, yet exist a standing reproach to this great city, with all their attendant saturnalia, inhumanity, confusion, indecency, and filthiness, as I endeavoured to exhibit them on that occasion, except perhaps, if possible, in a still more exaggerated degree of offensiveness, and I can only say, that I do most anxiously hope now to see these grievances at once and for ever disposed of. I have several plans and models I am desirous to submit for the consideration of the Commissioners; if they will permit me I will put in the following:—

Schedule of Plans, &c. specially prepared for the Smithfield Market Commission, 1850.

1. Cartoon plan of Smithfield (from actual survey), showing streets and roadways crossing and leading thereto.
2. Large plan of Smithfield market, with details of pens, rails, &c.
3. Plan of Smithfield, showing method of arrangement, also extent and cost of each successive enlargement to the market from 1635 to the present day.
4. Plan exhibiting the site of Smithfield appropriated as a dead-meat market, with designs for market-house, shops, &c.
5. Plan of Smithfield as a dead-meat market, showing another proposed method of arrangement.
6. Plan of London and its environs, illustrating a proposition to establish an aggregate metropolitan Cattle-market at Copenhagen Fields, near King's Cross, or an auxiliary market at Battersea, on the South of London.
7. Map of the environs, illustrating proposition to supply the metropolis from cattle markets north, east, south, and west, and ten miles distant on lines of railway.
8. Large plan of King's Cross, Copenhagen Fields, and neighbourhood, showing new site suggested for a metropolitan cattle-market to the Select Committee in 1847.

January 23, 1850.

Mr. W. Ternouth.

Mr. W. Santler, jun.

February 6, 1850.

T. Dunhill, Esq., C.E.

- February 6, 1850.
T. Dunhill, Esq., C.E.
9. Large map of London and its environs, showing proposed disposition and arrangement of ten outlying abattoirs encircling the metropolis at intervals of two miles.
 10. Plan showing arrangement of a first-class abattoir, including melting-houses, triperies, layers, pens, stalls, stables, sheds, &c. &c.
 11. Block plan of proposed arrangement for an aggregate metropolitan cattle-market for the reception of 6,000 beasts and 50,000 sheep, including abattoir, private slaughter-houses, extensive layerage, &c., &c.
 12. Elevation of principal entrance, market-house, banking establishment, &c.
 13. Large model, showing proposed method of arrangement for a new cattle-market, with slaughter-houses, layers, &c.
 14. Detail model of cattle-stalls for stock on sale.

The above plans constitute the main elements or subject matter of the evidence I have to give, and have been prepared, in order to meet the very reasonable objection that, although Smithfield cattle-market has been so generally denounced, no adequate remedy has been provided or suggested.

2116. Have you brought them with you?—I have [*producing the plans*]. This plan (No. 11) is a design for a new cattle-market, &c., arranged in the manner which I should propose with extensive layerage, private slaughter-houses, and general abattoir attached thereto.

2117. Does this plan refer to any particular site?—No, it may be constructed anywhere provided the space is sufficient.

2118. What space does it occupy?—The market-place alone occupies twenty acres.

2119. Then it has no reference to Smithfield?—None whatever; including public and private abattoirs, the extensive layerage and stallage, &c., I consider that not much less than fifty acres will be required to carry out the thing in a comprehensive manner.

2120. Does that include the site of a dead-meat market?—No, my feeling is adverse to the necessity of a connexion between the dead-meat market and the live-cattle market.

2121. Upon what grounds?—I do not think the experience we have had has proved the absolute necessity of it, and it tends to favour combination among salesmen, the possibility of which it would be better for the public should be avoided.

2122. Does not the supply of dead meat from the country regulate the price of stock in Smithfield?—To a certain extent only.

2123. From what experience do you speak?—The knowledge of this fact, that the principal market days at Newgate are not on the live-cattle market days, *i.e.*, the dealings in dead meat are comparatively small on Monday, which is the great Smithfield day; and although Friday is a busy day at Newgate, the business done at Smithfield is proportionably small.

2124. Are not Friday and Saturday the two principal days at Newgate?—A vast deal more business is done in the dead-meat market on Saturday than on any other day of the week. Tuesday is also a busy day at Newgate market, on neither of which days are live cattle sold in Smithfield.

2125. Are you aware there is a very general belief amongst the butchers that it is advantageous that the live and the dead-meat markets should be near one another?—There is no doubt that the feeling of 150 or 200 carcass butchers or meat salesmen located in Newgate market, is that way, but I doubt very much the advantage or absolute necessity of that to the 3,000 retail butchers and 2,250,000 consumers of meat in this metropolis. I would certainly give my opinion against the necessity and advantage of it.

2126. Your opinion must be grounded on some facts, will you state any facts upon which that opinion is grounded?—The present Chairman of the City Markets Committee gave clear and forcible evidence on this point last year, he says—

“I should beg to be clearly understood, although I think advantage would result from the removal of the live-cattle market from London, I am quite of a contrary opinion with regard to the dead-meat market; if you remove the dead-meat market from London, you would inflict a lasting injury upon small butchers and the industrious classes.”

Then we have, on the same occasion, his predecessor, Mr. Hicks, who filled the chair for nine years, an authority and a gentleman who, I think, will readily be accepted as the exponent of the feeling of the trade, and with whose opinions on this subject in general I most cordially dissent, but here we have the exception to this rule, for Mr. Hicks emphatically says in evidence—

“I am prepared to state, in contradistinction to other evidence, that the dead-meat market would not follow the live market.”

And again he says—

“You have had some evidence given that if the cattle market were removed to any given spot, the dead-meat market would, as a matter of course, follow it; now, my experience fortifies me in the opinion that the dead-meat would not follow it.”

And this is precisely in accordance with my own impression and belief, nay, I will venture to affirm, that Newgate market never can be superseded by any market place in the suburbs, and that any dead market established on the outskirts with that view will surely prove a dead letter. I may observe, too, we have six or seven other dead-meat markets in the metropolis, and at a distance from the live market, yet they are maintained.

2127. Do you know the character of them?—They are certainly nothing like the extent of Newgate market, and are more in the cutting trade.

2128. Are you aware that both the buyer and the seller say that it is a great advantage to the public to have the two markets as contiguous as possible?—I believe the seller of live stock

and the wholesale buyer, *i.e.* the salesmen in Smithfield, and the salesmen in Newgate market, have agreed in that for their own benefit. February 6, 1850.

2129. When you say both the seller and the buyer, do you mean by the "buyer" the retail purchaser?—No, I mean the carcass butchers. *T. Dunhill, Esq., C.E.*

2130. A man that purchases to sell again?—No doubt, in fact, the middlemen, whose business and profit consists in that practice.

2131. Have you any further observations to make in addition to your evidence of 1847?—I am anxious, in the first place, to explain my views as to the proper location of the metropolitan live-cattle market, and also on the establishment, location, and arrangement of outlying abattoirs for the supply of the metropolis.

2132. Will you give the Commissioners your opinion as to the best locality for the site of a market?—I have three separate arrangements to suggest to the Commissioners; one proposition I have to submit is, that there should be four markets—north, east, south, and west—at the distance of about ten miles from St. Paul's cathedral, *viz.*, at Barnet, Romford, Croydon, and Southall. This plan [*producing Plan, No. 7*] is prepared for the purpose, and will at once illustrate this project. They would be moderate sized markets; indeed, there are cattle-markets now at those places largely attended by London butchers, and there is certainly a general feeling, apart from the trade, that it would be a great advantage to relieve the metropolis entirely from the nuisance of a live-cattle market.

2133. Have you considered what effect that would have on the price of the article?—I do not think it would have any effect upon the price of meat, because the London butcher sells the meat he now purchases at those places as cheaply as that which he purchases at Smithfield, while the following extract from the evidence of Mr. Charles Merritt (an extensive salesman), in 1828, confirms the fact and my opinion:—

What are the relative prices of Southall and Smithfield?—They are about the same—one guides the other.

Allowing for the difference in distance, there must be a slight expense in getting home from Southall?—That is a consideration not brought into the scale.

The cattle would be brought alive for 4*d.* per head to the suburban abattoirs, and from the abattoirs dead to a very commodious wholesale meat market, which—it is an important feature in the system—I propose to establish on a very extended scale on the site of Smithfield, as in that case the retail butchers would probably deal nearly exclusively in dead meat, although the transit to either of those markets is remarkably easy, they being all on railways, and the distance short: Barnet (which would be the principal market) is on the Great Northern Railway, Romford on the Eastern Counties Railway, Croydon (on the south) on the Brighton Line, and Southall is on the Great Western Railway; the time occupied on the journey would not exceed half-an-hour, and the expense about 1*s.* 6*d.* for a return ticket.

2134. Are you acquainted with any similar arrangement in other large cities, which, judging by analogy, would lead you to believe that that arrangement would have the advantage of which you speak?—In Paris, the markets are at a distance. Poissy is at a distance of about 13 miles, and Sceaux about 5½ miles from the French capital.

2135. Are the abattoirs at that distance?—The abattoirs are in the neighbourhood of the city. I also propose that purchasers shall have the means and the option of slaughtering the cattle where they are sold, or of bringing their stock from those four markets to suburban abattoirs.

2136. There are markets there now?—Yes; and I think if Smithfield market were abolished they would immediately rise into important markets. I would hold them on separate days, for very obvious reasons, and those four towns would necessarily be materially benefited by a large accession to their trading interests. If, however, the Commissioners should resolve on the establishment of a single cattle market adjacent to the metropolis, I would propose it be established in the north-west suburb of London, in the neighbourhood of King's Cross, on the line of the Great Northern Railway. I may premise, I am not interested in any property, nor any joint stock company formed, or likely to be formed to promote the object of this inquiry, nor have I been at any time; I have always worked entirely alone in this matter, my chief anxiety being to assist in relieving the City and the metropolis from the host of grievous nuisances ever attendant upon the barbarous custom of bringing large masses of live stock into the heart of it for sale.

2137. Have you made any inquiry relative to the value of property at King's Cross?—Yes; I was formerly connected with the engineer department of the Great Northern Railway, and I am aware that the land required for the goods station (which is more valuable than that which I propose to take for the cattle market) was valued, and in fact purchased, by Mr. George Smith, surveyor to the Gresham Trust, and a chief authority in such matters, for 1000*l.* per acre.

2138. What was the date of that valuation?—It was in 1847, at the time of the inquiry before the Smithfield Select Committee of 1847. At that time I advocated this piece of ground [*pointing it out on Plan, No. 8*]; it is in the north-west suburb, and immediately abutting on the Great Northern Railway terminus, between that line and the London and Birmingham and the West India Dock Junction Railway, which traverses the whole of the north side of the metropolis, taking up all the railways from the River Thames on the east to the River Thames on the west. By placing the market there we should bring all the stock by railway without any driving; they would come out of the terminus of the Great Northern Railway, and off the West India Dock Junction line from all the other railways, at once into the market-place.

2139. Have you looked at Islington market?—I have, many times.

2140. What do you think of it?—There is no doubt it would be a great improvement upon Smithfield as a cattle market, but I do not think it is the best site that could possibly be

February 6, 1850. obtained; and if we remove the market at all, we ought to view the matter in the most liberal spirit with regard to the future necessities of the metropolis. I do not think the area appropriated to the market-place equal to the necessities of the case. It is being built up very much around; since the market was originally projected, buildings have risen up, and are rising up with extraordinary rapidity, close upon it. The immediate locality is inhabited by a very respectable class, who complain sadly of the nuisance they are subjected to from Islington as a cattle lair merely; it would of course become a much greater nuisance if a central market were established there.

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2141. Do you see any other objection to Islington market?—It is not in such a favourable position for the railways as King's Cross or Copenhagen Fields, inasmuch as the Great Northern Railway will certainly be the grand thoroughfare for live cattle coming to the metropolis.

2142. Is there any objection to Islington market on account of its being low and damp?—Islington market is low with reference to the surrounding locality. Looking at it generally with reference to its elevation above the River Thames, it would be sufficiently well situated for drainage: but it is formed on a piece of ground which has been excavated to a considerable depth for brick earth, and I think you would have to arrange some artificial means of drainage. I have some doubts whether the present sewers would be sufficient to drain it so effectually as is desirable; but my objections refer more immediately to its location and area; indeed, by a reference to the evidence given last year, it will be seen, an Honourable Commissioner now present then recorded his opinion that "the neighbourhood of Islington is altogether unfit for the purpose."

2143. What do you think of Copenhagen Fields as compared with the other spot you have suggested?—There is little difference in the two sites I have named—they abut upon each other; and the only advantage King's Cross possesses is, it would be in immediate connexion with the terminus of the Great Northern Railway, which would bound the market on one side, and it would also have the advantage of immediate canal communication, which is certainly an important consideration, owing to the facility it presents for disposing of the valuable refuse as manure, and by extending the area from Maiden-lane to Pancras-road, you get other outlets, which is also desirable.

2144. Is it not desirable the market should be on elevated ground?—Decidedly so; King's Cross is nearly 100 feet above Trinity high-water mark, and it is not necessarily an advantage that it should be on the very top of a hill.

2145. Is it a disadvantage?—Certainly not; except perhaps the consideration that the traffic generally to the market must surmount the greater ascent.

2146. Would it not be desirable that there should be drainage in every direction from the cattle market if it could be obtained?—A natural means of drainage, such as suggested by the honourable Commissioner, would certainly be advantageous.

2147. Is it not the case that from Copenhagen Fields there is drainage in every direction?—Yes, from every point of the compass, and when I suggested Copenhagen Fields, it was with a conviction of its being a very excellent site for the metropolitan cattle-market; and I think you would find, if the trade were consulted as to the best locality for the market, with the understanding that there is to be a new market, they would be one and all in favour of Copenhagen Fields.

2148. Copenhagen Fields would be rather further from the Great Northern Railway, but would it not be nearer to the North Western Railway, and would it not be as near to the Great Northern Railway itself, though not to the terminus?—There would be no difficulty in forming a siding at Copenhagen Fields, and taking the cattle off the Great Northern Railway there, avoid going to the terminus. I may observe, that being the first witness examined before the Select Committee in 1847, the suggestion that Copenhagen Fields or King's Cross, as I then stated it, they being nearly identical, would be the proper location for an aggregate metropolitan cattle market, originated with me, and I am gratified to find my suggestion has been adopted by the trade and practical men very generally, in preference to any other locality.

2149. What evidence have you as to the trade being satisfied with that locality?—I have heard several opinions to that effect from respectable butchers, who have made the question their especial study. I will instance Mr. John Cramp of Whitechapel, whose exertions to promote the removal of Smithfield cattle market do him infinite credit; and the Commissioners will find it stated in the evidence before the Select Committee of 1847 and 1849, that King's Cross, or the neighbourhood of King's Cross, would be the most eligible place for a market. I remember, at the time I advocated the north-western suburb of King's Cross in evidence before the Parliamentary Committee of 1847, an eminent salesman (Mr. John Giblett) remarked to me, on my leaving the House of Commons, that although he dissented from me as to the expediency of removing the cattle market from Smithfield, if it should be resolved there must be a new market established, that the locality I had selected would be the best place for it, and if the market was ever removed, he would support a project for a market in that locality, and would almost guarantee that of his brother salesmen, for the trade were decided in their objection to the Islington market; in short, he said the trade would never go to Islington market so long as there was any other, and that the locality I had suggested was the most desirable that could be selected.

2150. Have you had any personal communication with a large number of the trade of butchers?—No; I have not so much sought their opinions as depended on my own judgment, esteeming a voluntary expression of opinion far more valuable, effective, and useful, and more likely to lead to correct conclusions. Mr. John Cramp, a butcher of long standing and respectability, gave evidence in 1847 in favour of the site I had chosen, and assured me only a day or two since that he was more and more confirmed in that opinion.

2151. You do not know that it would satisfy the trade, but you think it would?—I firmly believe the trade would prefer it to any other, and I am supported in this belief not alone by Mr. John Giblett's and Mr. John Cramp's expression of approval, but, in addition, by the following passages in the evidence taken before the Select Committee last year:—Mr. Thomas Evans, a salesman of 20 years' standing, is asked—

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Would you advise that the site of the market should be on the north side of the river?—The north-west suburb, undoubtedly. I will give my reasons: the greater part of the beasts and sheep that come to Smithfield now come by rail, and I have no doubt the time is not very distant when nearly all, if not quite the whole, will come by that conveyance. The north-west suburb is situate very conveniently to the termini of all the great railways—the Great Western, the North Western, the proposed terminus of the Great Northern, and also the Eastern Counties, which brings the beasts from Norfolk and Suffolk.

You are of opinion that the site for a new market should be chosen somewhere on the outskirts of London, on the northern side of the river?—The north-west suburb of London; that is my decided opinion.

For facility of railway communication?—Decidedly.

You say in the north-west suburb of London?—I think the north-west suburb of London is the most desirable spot for a market, because it is high, and you might get very ample drainage; and it is, moreover, in the immediate direction of the railroads, without having occasion to drive the cattle through any of the streets. No part of the metropolis is so convenient as that, and it would be less inconvenient to the public also.

And again, on the same occasion, the sitting Chairman of the City Markets Committee (Mr. Pead), states in evidence—

I think Battle-bridge (King's Cross) would be superior to Islington, as being nearer to the railways. Battle-bridge is the best site I have yet heard spoken of.

So that we have Mr. John Giblett and Mr. Thomas Evans, as sellers of stock, Mr. John Cramp, as a large buyer, Mr. Pead, as a man of business, all testifying in favour of the site I have chosen. Indeed, I am thoroughly convinced the cattle-market should be on the line of the Great Northern Railway. Whether it be Copenhagen Fields, Holloway, or Hornsey, that is simply a question as to how far it should be removed from the metropolis. The Great Northern Railway traverses nearly all the principal grazing districts; and, in connexion with other lines, it will bring an enormous proportion of the supply of cattle to this metropolis. It would be most desirable if the stock could be at once moved off the Railway to the place where they are to be sold; it would also be desirable if the cattle could lie there until they are slaughtered; and it would be a still more desirable result if the large majority of the cattle were slaughtered in the neighbourhood of the market and brought to the site of Smithfield, to be sold there as dead meat. I wish to submit, for the consideration of the Commissioners, two plans which I have prepared for the appropriation of Smithfield as a commodious dead-meat market [*producing two Plans, Nos. 4 and 5*], and to show that the Corporation would derive a very much larger rental than it is now receiving, including a very handsome interest upon any outlay it would have to incur in constructing a dead-meat market the site and modelled upon the principles of either of these designs. With respect to Newgate market, I doubt not, looking at the increased quantity of dead meat now brought by the different railways, we have abundant evidence that Newgate market must either be enlarged to twice or thrice its present extent, or some substitute found for it, and that, too, very soon indeed.

2152. Are you aware that a great deal of dead meat comes up by railway?—I am.

2153. If you had the cattle-market in one position and the dead-meat market in another, would there not be a great increase of traffic in the streets, and inconvenience and expense?—Now both the live and the dead meat come into the heart of the City; I would only bring one, the carcasses.

2154. You say that you do not think it important that the dead-meat market should be in close proximity to the live-meat market. If you had the live-meat market in Copenhagen Fields and the dead-meat market at Smithfield, would not that materially increase the inconvenience of the traffic in the streets and the expense to the public?—A very large proportion of the butchers in this metropolis do not slaughter, but purchase dead meat; and I cannot help wishing that both small and large butchers were more on one footing, and all went to the dead-meat market.

2155. Would not it greatly increase the inconvenience of the traffic in the streets and the expense to the public, if the live and dead-meat markets were at some considerable distance from each other?—Live cattle would never come into the City if the cattle market was established in the north-west suburb, and intramural slaughtering forbidden, and I cannot see how it will affect the cost. It is a question long since settled that the mouths determine that; and I should have the greatest confidence in leaving it to the competition of the 3,000 or 4,000 retail butchers located in this metropolis. I am at this moment supplying my own table with meat from a butcher at Bridgewater, and get the prime parts at the rate of 6d. per pound, including carriage to London.

2156. Which do you consider would occasion the most impediment in the streets—a butcher's cart or a drove of sheep?—A drove of sheep give infinitely more trouble in their progress; they are more unwieldy, very slow, and occupy a very large extent of roadway.

2157. Your plan proposes to remove the obstruction from the driving of live cattle and sheep, and to substitute for that the carts of butchers carrying the prepared parts for sale?—It would probably increase the number of butchers' carts, but beyond all question the removal of the live-cattle traffic would be a great benefit to the thoroughfares of this metropolis. I may be allowed to mention to the Commissioners the localities I have selected for the abattoirs. This is a plan of London [*producing Plan, No. 9*] with the railways laid down thereon, and

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the sites, which would be desirable, if suburban abattoirs should be recommended by this Commission. I propose there should be a very considerable one wherever any new market was established for the sale of cattle, and nine others at certain distances round the whole metropolis.

2158. If the market were established at Copenhagen Fields or King's Cross, would you have all the abattoirs placed together there?—I would have one large abattoir there, and lesser abattoirs all round London at about two mile distances, and have selected the following sites for them :—

No. 1. Strand End, on the bank of the Thames, near the debouch of the Kensington Canal and the crossing of the junction with the South Western Railway.

No. 2. Kensington, at the Canal Basin and West London Railway Dépôt.

No. 3. Paddington, at Canal Wharf, and adjoining the Great Western Railway Dépôt.

No. 4. Pancras-road, on the Regent's Canal, near Pancras workhouse.

No. 5. Hoxton, on the Regent's Canal, at the crossing of the New North-road.

No. 6. Bethnal-green, on the Regent's Canal and Bishop Bonner's Fields.

No. 7. Limehouse, on the Regent's Canal and near to its terminal basin.

No. 8. Bermondsey, on the Grand Surrey Canal, near to the crossing of the Croydon, Greenwich, South Eastern, and North Kent Railways.

No. 9. Lock's Fields, or at the western terminus of the Grand Surrey Canal.

No. 10. Nine Elms, or Battersea New Town, on the River Thames bank,

And thereby secure the immense advantage of canal communication to all, for conveying away the refuse for manuring and manufacturing purposes.

2159. How would you get the cattle to those abattoirs?—They would be driven along specified routes, selecting the most unfrequented roads on the outskirts of London; only those cattle destined for abattoirs Nos. 8 and 9 need pass through the metropolis, and they would have to travel by night.

2160. You were understood to say that your great object was to get rid of the driving the cattle through London?—Nineteen-twentieths, and the remaining fraction should pass at night. The principal abattoir would be at the cattle-market.

2161. If the principal abattoir should be found sufficient, your scheme for the accessory ones would fall to the ground?—The establishment of the local abattoirs would depend upon the wishes of the trade, assuming intramural slaughter-houses forbidden, and following the plan pursued on the Continent, where they have them in different localities around the town.

2162. In what part of the Continent?—In Paris, I have seen them.

2163. Do you know what the opinion of the authorities at Paris is at present respecting those abattoirs?—I do not. If it be the object of this Commission to go into the detail question of abattoirs, I have further suggestions to make.

2164. Have you anything practical to state as the result of your own experience?—I can state for a fact, that the present slaughter-houses occasion an immense deal of cruelty, nuisance, filth, and consequent disease in this metropolis which it is imperative something should be done to abate. The drains from the slaughter-houses bring an immense deal of foul refuse into the sewers, which render them noxious and objectionable to a degree; the effluvia arising therefrom is very prejudicial to the health of the locality.

2165. Do you speak of that from your own experience?—Yes. I hold an appointment under the Metropolitan Commission of Sewers, and the officers who are employed in the sewers have frequently complained to me of what they suffer. One who was engaged in a subterranean survey handed me an extract from his diary, where he states, that on Saffron-hill, where the public slaughter-houses, in connexion with Smithfield market, have brought together a large number of manufactories for preparing the offal, all the sewers are in a most disgusting state. Here is the extract from his level-book; the memoranda were made at the time he was traversing the sewers referred to.

2166. What is his name?—Mr. Medworth, Superintendent of Trial Works. He says :—

“ The stench at this part is disgusting in the extreme, occasioned by the refuse draining from the slaughter-houses, and from drains where animal refuse is allowed to decompose. The sewer is lined with all description of filth: the stench is horrible. The stream is red with blood from the slaughter-houses; in some places it is 1 foot 6 inches deep, forming filthy cesspools, from which, when we step in, arises the most disgusting stench imaginable. The invert is washed away: the stench is horrible; we are obliged to burn paper and rags to enable us to continue at work. The drains are large apertures, several of them 3 feet long; the privies directly over the same. The greater part of this sewer is under the houses.”

So that the foul and deadly gases evolved must have arisen from the openings, and filled the houses, which at once accounts for the defective sanitary condition of that locality. Mr. Medworth goes on to say :—

“ This is one of the most disgusting and filthy sewers that can possibly be imagined, we were five hours in going to the end, a distance of only 10 chains and 10 links.”

And it appears they found an opening into a burial-ground, and there squeezed their way out through a hole, in fear of their lives from the condition of this sewer, which receives the refuse from the slaughter-houses, tripe, blood, and bone-boiling houses, gut-spinning manufactories, and the like, in the neighbourhood of Saffron-hill. The slaughter-houses which exist around Smithfield and their concomitants, the gut-spinning, bone-crushing, tripe-houses, and all that, I am very anxious to see removed entirely away from any populous district. It is proved by tables which I hold in my hand, and have been specially prepared by that indefatigable sanitary reformer, Dr. Hector Gavin, that the locality referred to is the very worst in the whole metropolis in a sanitary point of view.

2167. You mean the locality abutting on the City property?—Yes.

2168. It is not in the City?—No, it is not. But it is a blot upon this metropolis which ought to be removed, and, in my opinion, a contingent upon the maintenance of Smithfield cattle-market. This plan [*producing Plan, No. 3*] which I have prepared for this Commission, shows the successive enlargements and additions which have been made to the area of Smithfield market, and the cost of those enlargements. It will be seen that the acre and a half which has been added during the last 14 years has cost upwards of 54,000*l.* No doubt the Corporation took in the cheapest property they could find, and, for a moment setting aside the consideration of its objectionable location, to enlarge the market to the extent I truly believe is necessary, would cost five times enough to build a new market, the purchase of the land included, and two or three times the sum required to carry out the whole system of improvements I have propounded in the most comprehensive and perfect manner. The site of the General Post Office, which is but one acre and a half, cost 260,000*l.*

2169. From what materials has this plan been constructed?—Chiefly from a plan submitted to the Select Committee of 1847 by the City authorities; that plan is not correct now, because there have been alterations since 1847, and I have improved upon their map by correcting it up to the present time.

2170. Is the plan which you have put in a copy of the plan certified by the City architect, with the exception of the last item?—It is.

2171. How has the statement, with reference to the cost, been obtained?—The City Remembrancer in 1847 and 1849 put in statements of the expenses incurred for Smithfield market, from which it appeared, that upon enlargements and improvements from 1835 to 1848 there was expended 54,035*l.* 15*s.* 7*d.*

2172. Your statement of the cost at the foot of the plan is taken, not from the plan of the City authorities, but from the evidence of the City Remembrancer?—Yes; and, in conclusion, I may be allowed to observe, that, although I have no doubt the Corporation will do all in their power to improve Smithfield, it is my strong conviction that the public mind will never be satisfied and at ease until the cattle-market and the string of abominations it entails upon the City and the neighbourhood are abolished altogether, and I do hope and trust they will see the necessity and propriety of this, as in 1809 and 1810, when the City itself originated Bills for power to remove the market entirely away from so confined and populous a locality.

[*The Witness withdrew.*]

Adjourned to Wednesday next at 12 o'clock.

THURSDAY, February 19, 1850.

GEORGE CORNEWALL LEWIS, Esq., M.P., in the Chair.

Henry Lowman Taylor, Esq.; Thomas Henry Hall, Esq.; Mr. Deputy Hicks; James Low, Esq.; Thomas Dakin, Esq.; Mr. Serjeant Merevether (Town Clerk of the City of London); *Thomas Saunders, Esq.* (Comptroller); *Edward Tyrrell, Esq.* (Remembrancer); *J. B. Bunning, Esq.* (Architect), attended the Commissioners.

2173. You appear as a deputation from the Markets Improvement Committee of the Corporation of London?—(*Mr. Taylor.*) We do. We will produce to the Commissioners a plan that we have prepared, which we hope will show that we have endeavoured to meet the difficulties and objections which at present exist.

(*Mr. Bunning.*) This is a plan [*producing the same*] showing Smithfield market as it is at the present moment, with the surrounding property. It is proposed to clear 8½ acres, extending westward and northward from the present site of Smithfield, upon an inclined plane of 1 in 100. The bullocks on the south side and the sheep in these pens on the north side upon a regular hanging level. One entrance is provided at the south-east side. A vast number of cattle come along Long-lane. A new street is intended to be cut from Holborn-hill to Long-lane; and it would be a very desirable thing to do when the market should be removed from this space, but should it be opened now while the market is here, it would be inconvenient that the traffic should pass through where the cattle are, but by this arrangement the cattle will be entirely taken out of the thoroughfares and enclosed; in fact, the market could be locked up. Cattle coming down Long-lane would enter the market at this point, immediately opposite St. Bartholomew's Hospital, and they would go down the inclined plane to the ties and the sheep also. There is another entrance from St. John's-street. There is also an entrance from Cow Cross-street; there is an entrance from Turnmill-street, one also in the centre, and one at the extreme southern point, so that the cattle and sheep having to pass over Blackfriars' Bridge (which they do in considerable number) would go in this direction through Farringdon-street. On the upper level is provided space on one side for the pig-market, and on the other side for the calf-market. From one side round by the east to the other side there will be a series of arches 32 feet in depth, the light coming into them from the area. These would be formed into layers for the cattle unsold on the Monday's market, so that instead of driving them any distance from the market and returning again, they would remain here to be sold till the next market-day. These layers I propose to ventilate by means of a disc, driving the air through the whole of the cells by underground drains. There is no difficulty in that, because we should blow the air out immediately through all the openings. Then, at the base of the cattle-market, it is proposed to put the dead-meat market. This plan shows the various entrances; the houses surrounding the markets, and the shops in the interior, all of which will be better explained to you on a model which has been prepared. Attached to these markets, it is proposed to arrange slaughter-houses upon this spot. It is considered

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T. Dakin, Esq., C.E.

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H. L. Taylor, Esq.

T. H. Hall, Esq.

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J. Low, Esq.

T. Dakin, Esq.

Mr. Serj. Merewether

T. Saunders, Esq.

E. Tyrrell, Esq.

J. B. Burnings, Esq.

that about 1,000 bullocks a-week, and about 5,000 sheep are slaughtered at the present moment, and our plan provides for that number. Well-ventilated slaughter-houses could be arranged on this site to any extent, without displacing valuable property.

2174. Will you explain exactly the changes with references to the area which you propose to make? Do you propose to give up any portion of the area of the present market and to take in any new area?—We give up this portion of the market opposite St. Bartholomew's Hospital, which is now occupied by bullock-rails, and this portion next Long-lane, where the sheep are.

2175. How do you propose to appropriate those portions of space?—My idea was to put baths and wash-houses upon a part and the Haymarket to surround it.

2176. What is the area taken away from the present market according to your plan?—It is very considerable. We have $8\frac{1}{2}$ acres provided here, and I should think there was very little more than an acre remaining of the present site included in it: the site is shifted more westward.

2177. What is the present area of the market?—As nearly as possible, six acres.

2178. Out of those six acres you propose to retain about one acre?—Yes.

2179. Then to that one acre you propose to add about seven acres not now used for the purposes of the market?—Yes, $7\frac{1}{2}$; there are 12 acres altogether, consisting of $3\frac{1}{2}$ and $8\frac{1}{2}$, and the slaughter-houses besides.

2180. What is the entire area which would be appropriated to the live-stock market, the dead-meat market, the slaughter-houses, and all purposes connected with the market, according to your plan?— $12\frac{1}{2}$ acres; then I propose to erect a fountain here, by which we should be enabled, if it were considered desirable, to furnish the cattle with water; and it would be used for cleaning the market. There is a good deal of difficulty, in dry weather, in cleansing the market, but with the assistance of the water, the drains might be flushed, and the market swept, and cleansed immediately after the market was closed. There is great facility for drainage down this large sewer, which runs direct towards Blackfriars. The whole market could be cleansed by those means with the greatest facility, and the cattle provided with water if deemed necessary. I do not know whether the Commissioners are aware of the miserable property which now covers this ground. It is of the most inferior description. Here is a plan on which it is shown. It comprehends Sharp's-alley, where there is a large knacker's, and several slaughter-houses, and where the houses are of the worst description; and Fox and Knot-court, where the houses are also bad; and Garden-court, which is of a very inferior description of property; and Red Lion-alley, and Red Lion-place. With the exception of the houses that we pull down in Victoria-street, and some houses surrounding Smithfield, the whole is of a very inferior description.

2181. What proportion of that is beyond the City boundaries?—That is indicated by this line—all south of that line is in the City; all north out.

2182. How far do you go out of the City boundaries?—About 250 feet.

2183. Does this plan provide much better accommodation for both descriptions of stock, cattle and sheep, than the present market affords?—I think so; every portion that is enclosed here will be occupied for the express use of the cattle. In the present site the road-ways are included in it.

2184. What is the difference between the area appropriated to the purposes of the live-stock market, according to your plan, and in the present market?—It is nearly double in this plan.

2185. Will there be room, according to your plan to tie all the oxen to rails?—Every one.

2186. There will be no ring-droves?—None.

(Mr. Taylor.) At the present time 2,750 only can be tied; we propose to provide accommodation to tie 5,000, which is the maximum number exposed in Smithfield. The accommodation for sheep also in this new plan will be sufficient for the full number that ever has come to Smithfield.

2187. How many do you provide lairage for?—1,000 bullocks and 5,000 sheep.

2188. By what means do you propose to acquire this property which is not in the hands of the City?—By an Act of Parliament.

2189. With regard to the dead-meat market, what is the difference between the accommodation proposed by you, and the existing accommodation in Newgate market?—(Mr. Burnings.) It is about three times the area.

2190. When you say it is three times as much, do you mean three times the size of Newgate market as far as it is the property of the Corporation, or do you include the neighbouring houses?—There was a calculation made, that about 60,000 or 70,000 superficial feet would be required, taking the houses alluded to which surround the market. Now in this plan we have 108,800 superficial feet.

2191. What is the exact difference in point of size between this proposed plan and the present extent of Smithfield market?—I think it may be fairly computed at *twice* the area of the present market.

2192. What is the size of the proposed area, not including the dead-meat market?—Eight and a quarter acres.

2193. The present market is six?—Yes, that includes the roads; this does not. By the arrangement of the market in the form in which it is here laid out as to carriage-ways, the public will be enabled to pass round the market at every possible point, but they will not pass in any way through it; no vehicle of any kind can pass through it, unless allowed to do so by the authorities. This has been the great object of moving the market-place more to the westward.

2194. Was the plan of the dead-meat market laid out with the view of superseding all the dead markets in the metropolis, or only Newgate market?—Only Newgate market.

2195. What is the nearest point to which any railway comes from this site?—It is about the same as at the present moment.

2196. Can you state the number of animals that could be slaughtered daily?—They are calculated at 1,000 bullocks a-week, but additional space could be taken to any extent, without injuring valuable property, because from this point of the Sessions House it is one continuous line of bad property, knackers' yards, gut-spinners, and all sorts of objectionable trades.

2197. Supposing the area that you have laid down for slaughter-houses should not be found sufficient, what quantity of land could you add to it?—Speaking within reason, almost any amount; it is but to continue northward. All the property is bad up to the Sessions House.

2198. Is the burial-ground now used?—No, it has not been used for some years.

2199. Is the proposed area for the slaughter-houses within the City, or out of the City?—That is out of the City.

2200. With respect to the lairage, are the animals all to be tied up?—Ye s.

(Mr. Taylor.) There have been different suggestions made to extend the market. We have had other plans prepared to see which would be the best mode of effecting the object; but we thought that the remodelling of the market in this form and in this place would obviate the difficulties better than by allowing the market to remain as it is, and adding to it here and there.

2201. According to this plan the area of the market is more compact than it is at present?—Exactly so, and it does not interfere with the public roads at all.

2202. Supposing this should not be thought sufficient, have you the power still further of increasing the market?—(Mr. Bunning.) By increasing the excavations, and by removing the portion which has written upon it "building frontages."

2203. What space does that occupy—how much could you add?—Not quite half an acre.

2204. Could not the dead-meat market be extended also?—It might be taken further to the south to that extent.

2205. Are the approaches to the projected live-stock market generally better than those to the present market?—They are wonderfully improved.

2206. Are the approaches to the projected dead-meat market good?—Yes. There is a street 60 feet wide, Victoria-street. The carts never need stand in that street because there is a 50-foot street on the north, a 50-foot street on the south, and a 50 feet street on the east. And, moreover, it is proposed that on the day of the great market, when there may be 5,300 or 5,400 bullocks brought to the market, as there are far less sheep brought at that time, the bullocks would stand where this line of pens is [*pointing it out*]; and when the market is not held, the carts that would be waiting upon the dead-meat market could stand between those, and they would be entirely out of the public thoroughfare.

2207. Do you consider that space for the carts, without Victoria-street, to be sufficient for the carts that would come to such a market?—I do; with the facility that could be obtained in the market. It would be very desirable, and it would be the anxious wish of the Corporation, that no carts should stand in Victoria-street.

(Mr. Taylor.) We were anxious in taking up the question to make it as comprehensive as possible, believing that if there were objections to Smithfield market, there were equal objections to Newgate market in its present crowded state. Consequently we wished to provide ample accommodation for the dead-meat market as well as for live cattle.

2208. Is the slope of the proposed site uniform?—It is quite gradual.

2209. Will you state what you considered were the inconveniences in the present markets which it was your object to remedy?—I think it must be obvious, that the principal inconvenience from the present market is the want of accommodation, the want of space.

2210. Do you speak of Smithfield market, or of Newgate market, or of both?—Of both. With reference to Smithfield, the avenues to the public passing through are most inconvenient, which is obviated by the plan we now place before you.

2211. Is there any other inconvenience which you think this plan would remedy?—Another objection to the present market is that the cattle can use the market till three o'clock in the day. But we think that objection might be remedied, by having the market closed at an earlier hour. And there are certain regulations we should propose, which we think we should be able to place before the Commissioners in such a manner as they would approve.

2212. Do you get rid of the ring-droves?—Entirely; inasmuch as the room would be sufficient to admit of the full number with ties.

2213. Should you have sufficient accommodation in the lairs, if the market were closed early in the day to accommodate those that remained?—I think it very probable that we should have sufficient accommodation for those that might remain after the hour of closing the market.

2214. If the market were closed at an early hour you would have an increased quantity left—would these lairs in that case be sufficient?—I think if the trade were aware that the market would be closed at an early hour, they would be induced to make their purchases earlier than they do at present. I believe it is in evidence that many buyers remain lingering in the market with a view to get the cattle at a reduced price.

2215. Then you contemplate that those who purchased cattle late in the day would drive them away?—Assuredly. One part of our recommendation would be to make a charge for cattle remaining there after a certain time. Supposing seven o'clock to be the hour at which the cattle should leave, if they remain there after that time there should be a certain charge per hour afterwards, so as to offer an inducement to the buyer and the seller to remove their cattle as early as possible. We believe that inconvenience may have arisen to the public from the cattle being driven through the streets at a late hour of the day. And, therefore, we believe that we should be consulting the convenience of the public if, in any arrangements we make, we were to adopt some mode by which the cattle would not be in the streets in the middle of the day.

2216. Would some of the regulations to which you advert have reference so that point?—Certainly.

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2217. Can you state whether the Committee who have considered this plan entertain any doubt as to the insufficiency of the present accommodation in Newgate market, both as to the space and as to the approaches?—We are satisfied that there is a great want of accommodation at present in Newgate market; that the space there for the objects of the market is insufficient for the purpose.

2218. Are you quite satisfied that the space which you have assigned to the dead-meat market in your plan would be sufficient?—I should think, amply sufficient. Indeed, I am not sure whether it would not be sufficient for the sale of all the dead meat which would be necessary to be sold in London.

2219. Do you speak with reference to the present exigencies or the future?—For the present, and, indeed, I may say for the future. When you look at the space of $3\frac{1}{2}$ acres, it would certainly be twice as much as the space occupied by all the houses at present used in the sale of meat in the neighbourhood of Newgate market.

2220. What would be the arrangements contemplated with respect to the slaughter-houses; are the slaughter-houses to be the property of the Corporation, and to be let to the public?—In carrying out this comprehensive scheme we should make the slaughter-houses part and parcel of the whole scheme, so that we should have a power of control over them. In erecting these slaughter-houses we should of necessity clear away a considerable portion of bad property, now occupied for slaughter-houses and houses of that description. By having a control over the slaughter-houses we should be enabled to erect them upon the most scientific plan, where there would be as little objection as possible, and I apprehend that upon such a plan there could be no possible objection upon any sanitary considerations.

2221. Is it proposed that the slaughtering should be carried on by officers of the Corporation, or that the space should merely be let to private butchers for their use, subject to certain regulations?—It is proposed that, subject to certain regulations, the slaughter-houses should be let for the purposes of the trade.

2222. You contemplate doing away with all other slaughter-houses except those?—That would be a very essential regulation if it could be carried into effect directly or indirectly.

2223. What is the difference of level between the dead-meat market and the top of Long-lane?—(Mr. Bunning.) About 24 feet. This plan is based upon the assumption that Holborn-hill is to be raised to a certain extent. A plan has been laid before the Corporation for some time to raise the levels of Holborn-hill, and get rid of that acclivity that we have at present. It was suggested to raise the level 12 feet 6 inches; and if this plan were carried out, instead of raising it 12 feet 6 inches, about 10 feet 6 inches would be advisable, because it would give us a greater fall here. By raising the foot of Holborn-hill 12 feet 6 inches, the gradient would be only 1 in 45. A waggon might almost trot upon it, and all the gradients, east, west, north, and south, would be 1 in 45.

(Mr. Taylor.) Part of this plan also would afford facility for a site for lodging-houses for the poor, if it were thought desirable, as well as baths and washhouses. It is, of course, no part of the object of the Commission, and we only put it upon the plan to show that there are facilities for providing for those parties that would be removed by the alteration. We should be very anxious to carry out anything that appears reasonable for the benefit of the community, particularly of the poor.

2224. Will you now state the financial part of the plan. What would be the cost of the property which you would have to buy, and how would you be reimbursed?—We can only give you a rough estimate of what we believe it may be.

(Mr. Bunning.) The cost of the erection of the live-meat market is estimated at 245,000*l.* for the purchase of the property and arranging the market.

2225. Does that sum include both the purchase of the site and the erection of the market?—All, with respect to the live-meat market, of $8\frac{1}{2}$ acres.

2226. Now, as to the dead-meat market?—The dead-meat market has been estimated by myself at 177,000*l.*

2227. Does that include both the purchase of the site and the buildings?—Yes.

2228. Now the slaughter-houses?—The slaughter-houses have been estimated at 45,000*l.*

2229. Does that sum include everything?—Yes, providing for slaughtering the number that has been stated.

2230. Is there any other expense which you have to provide for in addition to those items?—There is the expense of the new street for uniting Holborn with Long-lane; but that is quite irrespective of the market, that is 60,000*l.*

2231. Is there any expense connected with the abandonment of Newgate market?—No, because the site would be valuable, and there has been no set-off made for that.

2232. What set-off have you with regard to the site of Newgate market and the portion of Smithfield which you abandon?—There are the frontages of the abandoned ground: a sum of money has been put upon that, as well as upon the piece of ground opposite the hospital; I think it was 55,000*l.* The upper part of the present market is still retained for a hay and straw-market, around the proposed baths and washhouses.

2233. Is any retained for a horse-market?—No, the horse-market is provided for in the new cattle-market, because it would not interfere in any way with the cattle-market, being held on another day.

2234. What is your estimate of the total cost of the change which you propose?—The live market 245,000*l.*, the dead-meat market 177,000*l.*, and the slaughter-houses 45,000*l.*, making a total of 467,000*l.*

2235. What is the gross cost of the improvements which you propose? and what is the amount of the set-offs which you propose to deduct?—It would be that amount less the 45,000*l.* which I state for the ground that will be abandoned.

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2236. How do you distribute that 55,000l.?—I take it away from the expense incurred in the cattle-market.

2237. Then what would be the gross expense of the cattle-market?—It would be 55,000l. more; it would be 300,000l.

2238. How do you propose to raise this sum?—(Mr. Taylor) We propose to raise the amount by an additional charge.

2239. How would you raise the gross sum that would be required in the first instance?—It would be raised upon the security of the tolls.

2240. You would propose to borrow the money necessary upon the security of the tolls, power being given by Act of Parliament?—Exactly so.

2241. Would you provide for the gradual extinction of this debt by a sinking fund?—Yes, so as to pay off the amount within 30 years, and then to revert to the ancient toll.

2242. What addition would you make to the tolls in order to provide for the sinking fund and the annual interest?—We have not quite prepared that so correctly as we should like to do.

2243. What would be the annual sum that you would have to raise?—About 14,000l. a-year. That applies to the live-meat market only.

2244. What is the net produce of the present tolls of Smithfield market?—About 5,000l.

2245. Then you would have to raise about three times the amount of the present toll?—About that.

2246. You have not yet been able to mature your plan of increased tolls?—No.

2247. How soon shall you be able to do so?—We shall be prepared to furnish the Commission with further information in the course of a few days. Our desire was, this morning, to produce this plan before you, and to see whether it meets your views, or whether you would suggest anything by which we might improve it. Our object is to effect that which will remove objections as far as possible, retaining it in its present site as being a central position.

2248. Is the lower part of the dead-meat market sufficiently ventilated?—(Mr. Bunning.) With respect to the ventilation of the market, I should propose that the space between the houses be covered with a range of lights, all the glass looking towards the north, that no sun should penetrate the market. By that means we should avoid blinds, and much heat, and it would be very easy to drive a sufficient quantity of air between the two ceilings, the skylight, and the ceiling of the market. There would be no fear whatever of want of ventilation.

2249. This plan has been prepared by a Committee that was appointed by the Court of Common Council?—(Mr. Taylor.) Exactly. In submitting this plan to you, of course we could not engage with certainty that it should be acted upon; but if it received your approbation, and it appeared to meet the views of the Commission, we should then be enabled to report to the Court of Common Council as to what arrangement we could make.

2250. Can you form any judgment whether these plans would be likely to be adopted by the Court of Common Council?—I believe we may with confidence say, that whatever yourselves and the Committee should arrange with regard to the plans, the Corporation would adopt.

2251. If it is thought that the dead-meat market is not sufficiently large so as to furnish an adequate dead-meat market for the whole of the metropolis, would it not be possible to use for that purpose that which is now laid down as lodging-houses for the poor?—(Mr. Bunning.) Certainly.

(Mr. Taylor.) If we wished to make an extension of this market, we could appropriate the portion which is now intended for slaughter-houses, and the slaughter-houses could be carried further north. We consider it very essential that all these things should be together, the live-stock market, the dead-meat market, and the slaughter-houses.

2252. Upon what data is the calculation of the expense made?—(Mr. Low.) The data are the experience of our surveyor, in the great improvements which we have been carrying out.

(Mr. Hall.) The Corporation have no fear of carrying it out for the sum calculated.

2253. (Mr. Bunning.) You consider that it may be safely calculated that the work may be carried out for a sum not exceeding the estimate?—I do. I have made a vast number of estimates for the Corporation, and up to the present moment I have always been able to carry out the work for the sums estimated. The works have been very extensive.

2254. Have you had great experience in valuing property for improvements?—Very considerable. These valuations have been very carefully taken, house by house.

(Mr. Taylor.) Our great object is to remove the present objections as far as possible; and to retain the market in the centre of the metropolis, which we consider to be desirable; and in order to carry it out well, and to effect everything that is important, we have taken a comprehensive view of the subject.

2255. Do you consider that the Corporation as well as the public has an interest in retaining Smithfield market upon its present site?—We are quite aware that the Corporation have no pecuniary interest in retaining the market; that it is not a source of considerable emolument, as the public have been led to believe that it is, which is an erroneous impression. But as trustees to the market, and as representatives of the public, we think that we are performing a duty to our fellow-citizens by retaining it upon its present site.

2256. Is there any considerable body of your fellow-citizens who wish it to remain where it is?—I believe it is considered that the public voice is against retaining Smithfield. But there is a great question whether, at the bottom of the agitation for the removal of Smithfield, there are not some interests of a private kind. When I refer to "fellow-citizens," I mean to use the word in a strict sense—speaking of the inhabitants of the City.

(Mr. Hall.) It is considered that the objections which apply to the present market would

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not apply to the new one. We believe that by our present proposition we should entirely obviate almost every point of objection.

2257. You consider that the objections referred to as against the present Smithfield market would not apply to the new order of things?—Certainly.

(Mr. Taylor.) Nobody can pass through Newgate-street, especially on a market day, and not feel that a great inconvenience is occasioned there which would be sufficient almost to create a public feeling against the market. But by the proposed plan we should remove that altogether, and no one would object to be able to purchase his meat in a central position. We know that the centre is the most desirable and most accommodating place for the public. The centre is, of course, nearer to each side than the one side is to another; therefore, I apprehend that it is the most convenient spot.

(Mr. Low.) The prevailing opinion in the minds of the Corporation I conceive is, that, looking at the City as a great mercantile community dependant upon trade for their support, it is their duty to protect their interests in that respect, and not to send away from the centre of the City a market which brings in a vast general return.

2258. In what way does it produce a large return locally?—A return of nearly eight millions per annum necessarily brings a vast many people into the City; and there are very few people that come into the City that do not do some business with the shop-keepers. In that way the trade of the City is enhanced.

2259. That is to say, the attendance upon Smithfield market incidentally increases the custom of persons in trade in the City?—Doubtless.

2260. Are those persons generally in favour of retaining the market in its present site?—All the tradesmen at all connected with the market are deeply interested in it; there are large families and successive generations that have grown up in the market who are dependent upon it.

2261. Those persons are influenced rather by their private interest than by regard to the public interest?—Doubtless.

2262. Are they much represented in the Common Council, and does their voice influence the deliberations of the City authorities?—Scarcely any of them are identified with the Corporation.

(Mr. Hall.) I should say that they are least represented of any body, but the strong feeling of the Corporation is, there are so many interests tied up together, that the removal of the market to a distance would distress a large portion of the City; there is a belief, whether wrong or right, in circulation, that the Corporation are only doing it for the benefit of a portion of their fellow-citizens, and for the private advantage of the Corporation. Now certainly those that represent the general body of the citizens in the Common Council are very far from being connected with the interests of the locality of Smithfield.

(Mr. Deputy Hicks.) Smithfield market is in Farringdon Ward. I believe it is stated that Farringdon Ward is about a fifth part of the City. Upon the last election for Common Councilmen there was a contest in that ward. A gentleman who had been several years a member, sent placards round the ward, calling upon all the inhabitants to pledge every Common Councilman they elected to the abolition of Smithfield market, as a nuisance to the neighbourhood; the result was, that the inhabitants turned him out, and elected all the other parties. That would show that the inhabitants of that district are in favour of the market continuing, as being an advantage to the neighbourhood.

2263. Do you know how many publicans there are in that ward? Are there 300?—I could not answer the question. It is a very large ward, but I should hope there are not so many as that.

2264. In the event of the removal of the dead-meat market from Newgate, would there be any difficulty in dealing with the vested interests in the market?—(Mr. Town Clerk.) The property is held under what is called the Fire Act, under the Dean and Chapter of St. Pauls. I see no reason to apprehend that there would be any difficulty in making arrangements with them. It would require the interference of the Legislature for the purpose of effecting it. [*A model of the proposed alterations was produced.*]

(Mr. Bunning.) From this model it would appear as if the eastern end were the highest point, and the other the lowest. Whereas this is higher than that—there is a fall of 1 in 50 from the one to the other—so that the cattle would be kept higher, and the whole market would be seen at one view, which, I believe, is a considerable advantage to buyers and sellers.

2265. For what number of bullocks would there be lairage?—(Mr. Taylor.) It would accommodate 1,000 bullocks. Now, I believe, the average of bullocks throughout the year is something like 3,000, so that in providing lairage for 1,000 we should accommodate as many as would ordinarily be left.

2266. According to this plan, the area for the cattle and the area for the sheep are equal in size?—Yes; the removal of those pens would afford ample accommodation for what is termed the great day, when there are about 5,600 brought into the market. Even if those pens were all removed, there would be still abundance of room for the sheep upon those days. It is very important that you should not lose sight of this fact, that the proposed new market contains 8½ acres for the live cattle, and the whole of the present market is only 6½, which includes the foot and carriage ways.

2267. With respect to the horse-market, you propose that it should be held in the cattle-market, but on other days of the week?—(Mr. Taylor.) Yes, if it is not abolished. At the present time there is a very small charge for horses, and that induces the worst description of horses to be brought there for sale.

(Mr. Deputy Hicks.) I think the horse-market should be abolished; but it must be done by Act of Parliament.

(*Mr. Taylor.*) Of course, with regard to the entire plan, nothing can be done without an Act of Parliament. An Act of Parliament would be necessary, not only for clearing the ground, but also for new regulations.

(*Mr. Hall.*) With regard to compensation for Newgate market, I think it must strike the Commissioners that the question of compensation as to Newgate market must be very different, according to whether you retain the live-stock market and remove the dead-meat market near it, or whether you deprive them altogether of it. That question will depend very much upon the Report of the Commission.

2268. (*To Mr. Deputy Hicks.*) Do you think that the present tenants of the Corporation in Newgate market would be glad to exchange their present occupations for stalls in the projected market?—Without a doubt. It is not the tenants of the Corporation that have a vested interest, it is the occupiers of the houses which do not belong to the Corporation, that is the difficulty; unfortunately, they belong to a body that may make difficulties—the Church. I have spoken to several who hold house property in Newgate market, and they would be quite ready if this plan is carried out to leave their present occupations in Newgate market and take occupations there.

(*Mr. Taylor.*) There is one thing I should like the Commissioners to understand, that is, that we are quite satisfied that the people who would be accommodated in the dead-meat market would pay such a rent for their accommodation as would amply repay the outlay upon the dead-meat market.

2269. Do you propose an increase of tolls in the dead-meat market?—No; we propose in the dead-meat market to let the property, and we believe the return would repay the outlay.

2270. In what time?—In 30 years.

2271. Then the reimbursement for the expense of the new dead-meat market would, in that case, come from the increased value of the rent, not from any increase of tolls there?—Just so.

(*Mr. Hall.*) The Corporation look for no advantage to themselves, either at present or prospectively; they are only doing it for the public.

(*Mr. Deputy Hicks.*) I am of opinion that the tolls would be those which have been anciently acknowledged for centuries back, and I am satisfied that the outlay for the dead-meat market would be repaid by exceedingly easy and liberal charges, as between landlord and occupier.

(*Mr. Taylor.*) With regard to the slaughter-houses, and the expense of those slaughter-houses, our great object would be to act in such a manner as would be unobjectionable to those who are the strongest advocates for sanitary reform. They would produce an annual income, which would repay the outlay, and, I believe, the parties using them would be very glad of the accommodation; and, if the space that is allotted should not be considered sufficient for the purpose, we can obtain any extent of ground for additional accommodation. I may say, the more property we pull down and take in, the greater improvement will be effected in the neighbourhood.

(*Mr. Deputy Hicks.*) There is a large spot of ground on the opposite side of Victoria-street.

2272. What space is there on the opposite side of Victoria-street that may be used?—(*Mr. Taylor.*) About 100 feet.

2273. Would that be half the area of the contemplated dead-meat market?—I should say it would.

(*Mr. Hall.*) The Corporation have not looked upon it as necessary to obtain more ground, but there are facilities for obtaining any quantity of ground; there is plenty of room there, and ground which evidently does not readily let, and does not seem to be valued.

(*Mr. Deputy Hicks.*) The ground would not be long before it is let if this plan be carried out.

(*Mr. Bunning.*) If it were considered that this market would not be large enough, nothing could be easier than to put the base further to the north, and to put the dead-meat market on the other side of Victoria-street.

(*Mr. Taylor.*) This plan offers the greatest facility for the drainage of any part of the metropolis, from its access to the river.

2274. Drainage into the Thames?—(*Mr. Hall.*) There being no other drainage at present anywhere. I am one that think there might be other means, but there is not at present; but till there is another system adopted, this offers the greatest facility with the present drainage.

(*Mr. Taylor.*) At present the Thames is the only outlet we have. Wherever you might place the market and the slaughter-houses, the drainage must necessarily empty itself into the Thames; but, I believe, the site of this market affords facility for a separate drainage, if necessary, that the slaughter-houses may be drained by a separate pipe, which might be received at the mouth of the river, and disposed of as the present Metropolitan Sewers Commission (of which I happen to be one for the City) may think desirable, so that the objection as to the outfall into the river could be obviated as much in the present site as it could be by placing it anywhere else.

(*Mr. Bunning.*) The present outfalls must be taken into consideration whenever a new line of drainage is formed. This naturally runs into the present drainage to the River Thames, and, I presume, that whatever new arrangement is made, the outfall of the Fleet Sewer will be taken up near the river.

(*Mr. Hall.*) In short, this is the best till another drainage is found.

[*The Deputation withdrew.*]

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Mr. George Hill examined.**Mr. G. Hill.**

2275. Are you a banker residing near Smithfield?—In Smithfield.

2276. Will you describe the exact nature of your business?—At the commencement of the market the butcher effects his sale with the salesman; the salesman then desires him to pay the money to us. After the market is closed the salesman comes to our office, and the accounts of sales are made out and posted that night.

2277. How long have you been in this business?—Twenty-five years.

2278. Are there many persons engaged in it?—Seven different banking-houses.

2279. How much money passes through your hands generally on a Monday?—From 35,000*l.* to 40,000*l.* each Monday, taking the average.

2280. How soon is the money paid to you after the sale is effected?—Sometimes within five minutes, and sometimes within half an hour or an hour, and sometimes longer.

2281. Does the butcher attend at your office?—Yes, he comes to the office, and pays the money in to the salesman's account. He says, I have bought two beasts of a certain salesman, and the amount is entered in a book kept especially for that salesman.

2282. Do you remit the money to the grazier in the country?—Yes. Sometimes the money is remitted by draft on that evening; some is not paid in till the following morning. If the orders are to pay the money into a London banker's on account of a country banker, it is paid in on the following morning.

2283. How, then, are the remittances made to the grazier?—They are remitted at the same time; sometimes by draft attached to the sale account, and if not, the money is paid into the banker's in Lombard-street who receive for the country bank in the locality; they advise it, and we pay the whole amount to them.

2284. Do you pay by drafts upon the London bankers?—We pay by drafts upon Glvn's. Our payments to Barclay's, at this time of year, on Tuesday morning, generally average 6,000*l.* to 7,000*l.*

2285. Is the average amount of receipts of the seven houses about the same?—No, I should say not.

2286. Can you state what is the average?—I cannot say.

2287. Do you think yours is above or below the average?—I should say that ours is equal to the first, and certainly above some of the others.

2288. Are the bankers all resident immediately close to the market?—All in the market.

2289. Would there be any difficulty in carrying on your business, supposing the site of the market were removed two miles from the present site of Smithfield?—There would be great difficulty, inasmuch as it would be impossible for us to get the sale accounts away on Monday night. It frequently occurs that, out of 400 or 500 accounts that are sent away, we pay the extra penny upon 150 of them.

2290. That is owing to the late hour at which the market is closed; but suppose the market were closed earlier?—That, of course, would have some effect; but still there is a vast deal to do; we are writing all day.

2291. Is it important that the remittances should be made on the Monday rather than Tuesday?—Very much so. I think that if it were not for the quick return they get from Smithfield we should not get so much stock at the market.

2292. Do you think that the difference of a day would materially influence the dealings of the market?—We have always found that, if there has been any delay in the remittances, we generally have letters up complaining.

2293. Is not the cause of those complaints the expectation that the money will be remitted on the Monday; and is it not probable that, if the parties did not expect the money to be remitted till the Tuesday, they would not complain?—I can hardly answer that; but many country markets are regulated by the price in Smithfield on Monday. There are many markets held on Tuesday in different parts of the country.

2294. Are the transactions between the butchers and the bankers usually ready-money transactions?—Not entirely so.

2295. Do the bankers ever give accommodation to the butchers?—Yes; the bankers pay the money for whatever amount of cattle is sold, whether it is paid for or not by the butcher.

2296. So that the grazier, in fact, sometimes obtains the price of his cattle before the butcher has paid for it?—Yes.

2297. If the site of the market were moved, and your bank were removed equally, would there be any further objection?—There is another great objection. We are in the habit of taking a vast number of drafts which we generally send in to Messrs. Glyn. We receive on Monday morning from 600 to 700 drafts from the butchers in payment of stock. If a butcher has to make a payment of 30*l.* or 40*l.*, frequently we receive three or four drafts to the amount of 5*l.*, 8*l.*, and 10*l.* each.

2298. Is it of importance in your business to be near Lombard-street?—Yes.

2299. What are the advantages you derive from it?—The great advantage is, in the first place, with respect to getting those drafts cleared as speedily as possible. We take them upon the faith of the butchers; consequently, the sooner they are converted into money the safer we are.

2300. What is the latest period of the day at which you, at present, receive money?—Sometimes as late as four o'clock, or past four; but, generally, the principal part of the money-taking is over when the market closes at three o'clock.

2301. Supposing the market were removed further off than Smithfield from the centre of the metropolis; if the market closed at an earlier hour would there be any difficulty in getting

your receipts cashed, transacting your business with Glyn's, and, at the same time, corresponding on Monday night with your country customers?—That certainly would obviate the evil to a great extent; but still there is so much to be done on Monday that I think we should find it a very difficult matter to get all the accounts completed and sent off, supposing we had to send them a distance of two or three miles. We are writing all day now.

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Mr. G. Hill.

2302. Are the cheques you send crossed cheques?—Not all crossed. We, of course, cross them; but the majority of them are crossed.

2303. To go through the clearing-house they must be paid in before three o'clock?—A quarter-past three; where there are 300 or 400 cheques in a parcel it must take Messrs. Glyn some time to go through them.

2304. Have you ever made a calculation of the total quantity of money that changes hands in Smithfield in the course of a year?—No, I never have.

2305. Did you ever hear any calculation?—No; I believe there was a calculation made, but I have no recollection what it was.

2306. Is your business equally with regard to Newgate market?—No; we have very little connexion with Newgate market, further than that we have several of the butchers who keep accounts with us. Our concern is entirely with Smithfield.

2307. And so with the other six houses?—All the same.

2308. Are there persons who stand in the same relation to Newgate market in which you stand to Smithfield?—I think not.

2309. Do the different bankers in Smithfield do business with different bankers in Lombard-street?—Yes, there are two that bank with Messrs. Barclay.

2310. Do you generally send all your cheques by one clerk, or do you send several times a-day?—We send twice a-day; we send in the morning about eleven o'clock to catch the twelve o'clock clearing, and we send again about half-past two or a quarter to three. We make it as late as we can in the afternoon, in order to get all the drafts in that we can.

2311. You send twice a-day?—Twice a-day.

2312. And you send by a man on foot?—Yes.

2313. Is there anything further you wish to state?—I have nothing further to state; but as far as the health of the place is concerned, I can bear witness to it. I have lived 25 years in the place; I have brought up my family there; they have always enjoyed good health, and I have never had a servant leave me from ill health, and there is nothing like malaria, nor anything of the sort arising from the market.

[The Witness withdrew.]

Mr. William Johnson, Mr. Frank Blachett, and Mr. Lewis Thompson examined.

Mr. W. Johnson.

Mr. F. Blachett.

Mr. L. Thompson.

2314. (To Mr. Johnson.) Do you reside near Smithfield?—I reside in Smithfield.

2315. What is your occupation?—I am a wine-merchant.

2316. Are you in business on your own account?—Yes.

2317. Do you wish to make some representations to the Commissioners?—Yes. As to the inquiry as regards Smithfield market, in the prospect of an alteration, I would rather answer any questions that the Commissioners may have to put.

2318. Does your father keep "The George" at Smithfield;—No; my father is dead; my mother does.

2319. Do you find that the contiguity of Smithfield market brings you a great number of customers?—Yes, a wonderful number.

2320. Are they people who attend the market from the country?—Yes, solely; persons from the entire kingdom.

2321. Then, if Smithfield market were removed, would it be a great detriment to your business?—It would be ruination to us, as the business is at present constituted.

2322. In what manner does your business arise from Smithfield market; do you sell directly to the persons who frequent it?—Yes, to country gentlemen who come and stop at the hotels to transact their business at Smithfield.

2323. Do you sell wine upon your premises?—I sell wine at my premises; not to be consumed upon the premises, but to be supplied to hotels in the neighbourhood.

2324. Then your customers are the tavern-keepers, who sell to persons that frequent the market?—Not one. My customers are entirely country gentlemen, who come to the market to do business. Not an inn-keeper in Smithfield trades with me except my parent.

2325. Then it is the accident of your being near the market which induces the persons near the market to buy wine of you?—Yes; they are our customers. If we attend to our business we can get business from it.

2326. Have you any doubt that equal disadvantages would arise to other tradesmen living in the immediate vicinity of Smithfield if the market were removed?—I am sure it would operate upon every tradesman that can be named.

2327. Do you speak only of your own business as a wine-merchant, or do you speak confidently of all other tradesmen at Smithfield?—Yes, all.

2328. Would the removal of Smithfield market affect one class of trades more than another?—It would annihilate entirely the houses of accommodation—the licensed houses. That is one class that it would entirely do away. The neighbourhood depends entirely upon the market, which is held there twice or thrice a-week.

2329. What is the number of houses that would be prejudiced by the removal?—In the trade of licensed victuallers there are 13 in Smithfield; within 150 yards of Smithfield there are 30 more, that is 43.

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2330. In all, in Farringdon ward, how many publicans do you suppose there are?—I do not know; but I speak of those in Smithfield and within 150 yards of Smithfield, that are affected by the existence of the market. I can tell you the rent they pay, and their expenses, and the length of the leases. The rental of the 13 in Smithfield is 1,490*l.*; the rental of the 30 within 150 yards of Smithfield is 2,690*l.*, making a total of 4,180*l.* In addition to that, the licences of those houses cost annually 631*l.* In addition to that, the rates on the same houses come to 1,720*l.* That is only the rent, the licences, and the rates.

2331. Under whom do those victuallers rent?—The majority of the houses are private property. There are some two or three that belong to the corporation of the hospital. In some instances they are freehold, belonging to the occupiers. I should like to mention one gentleman who pays a ground-rent of 80*l.* a year, and the length of his lease is 40 years to come.

2332. What trade is his trade?—A licensed victualler.

2333. Would the removal of Smithfield market be a great detriment to that person?—It would be ruination; he never would get the ground-rent of the property. I should also say, speaking of this trade only, that the premiums which the occupiers of those houses have given for their businesses would amount to the gross sum of 28,108*l.*

2334. Within what period have they given those premiums?—For instance, ourselves. We have been occupiers of "The George" and of "The Grapes" for the last 25 years, and there are several who have lived in Smithfield as long as we have.

2335. Have you any interest in "The George"?—Not the slightest. In describing the business of the houses in Smithfield, I think "The George" would be a fair criterion. For years past the average number of country gentlemen who sleep at that house in the course of a year is 2,030. Every house in Smithfield makes up accommodation for country gentlemen.

2336. Have many public houses in the vicinity of Smithfield failed?—I think three only during the time of our living in Smithfield have failed. I do not know another licensed house the occupier of which has failed during our continuance in Smithfield.

2337. Do you recollect what was given for the good-will of your house on coming into it?—1,000*l.*

2338. Would that tolerably represent what is given generally for the different public-houses?—Yes. There are some houses for which a great deal more was given, because their rents are not quite so high.

2339. Is there any other statement that you wish to make?—Every trade that you can mention is dependent upon the market. With respect to the rental of Smithfield, there are but 13 houses of licensed victuallers; but there are 66 houses in Smithfield, and the rental of Smithfield is 6,090*l.* a year. The property in Smithfield is rated at 13,828*l.* in the parish rate-books. We feel extremely anxious that you should have a faithful and satisfactory representation of the interests of the inhabitants, whether it is with a view to the prevention of the removal or to compensation, or to anything of that nature. We should like to keep what we have got—the business of the market—and we feel satisfied that the more it is explained the more it will be seen that we are entitled to it, not only for our own interest, but for the interests of the public at large.

2340. In what way have the public at large any interest in your retaining the custom of Smithfield market?—The public at large would be affected by any additional cost that was caused by the removal of the market. If the buyer or the vendor is put to greater expense than they are at present by the transfer of the market, the consumers must pay for it.

2341. (To Mr. Blackett.) Do you reside near Smithfield?—I live at the corner of Smithfield, where our family have lived for sixty or seventy years.

2342. What is your business?—My business has lain for sixteen years with the butchers. I sell those blue frocks that they dress in.

2343. Would your business be affected by the transfer of Smithfield market?—I expect that I should have to look out for another means of getting business altogether. I have lived at that corner for sixteen or seventeen years. With regard to the alleged unhealthiness of the place, I remember both the cholera attacks, and in neither attack of the cholera did we have a single case in Smithfield; and Dr. Lynch, who was a great sanitary doctor, has told me that, so far from considering Smithfield an unhealthy place, he considered it eminently healthy, and that he had told his patients to send their children (as "Punch" says) to walk in Smithfield, because he considered it very healthy. I have never seen any sickness in my own family, and I do not know that any of my neighbours have complained of any sickness occasioned by their living in the market. My shop windows are wholly unprotected from the cattle; the pavement is not very wide, and I never had but three panes of glass broken by bullocks getting on the pavement, and I never saw man, woman nor child touched by bullock's horn. The worst accident I ever saw was a bullock kicking a man from his treading upon his foot. I never saw a case taken to the hospital in consequence of an accident from the bullocks.

2344. Do you hold your house from year to year?—I hold it of the City. The lease is nearly expired.

2345. Are you aware that the first operation for tying the carotid artery was performed by Mr. Abernethy in consequence of an accident by a bullock's horn?—Not at all. But I see a great many accidents from gentlemen driving high-spirited horses coming into the place. There is another thing that I might mention. I am constantly in the habit of having countrymen come to my place to buy those blue coats that they wear; but a large part of my trade does not consist of that, but they buy things which they might perhaps buy in the country; but there is an impression everywhere, that a man can buy everything better in London than in the country. I have constantly parcels of grocery and drapery of all sorts to enclose in my parcels. On Monday I had a customer in my shop from Liverpool,

and one after him from Exeter, at the same time I had one from Brighton, and at the same time I had one who lived close by the neighbourhood of Rush, in Norfolk. All those men bought things which they might have bought in the country had they pleased.

2346. That argument would apply to the neighbourhood of a metropolitan cattle market wherever in might be situated?—The immediate neighbourhood, but not the distant neighbourhood; and not even the immediate neighbourhood, unless everything was exactly to their hand. A man who comes to market is generally pushed for time. He will not go out of his way to buy these things; but these shops being in the immediate neighbourhood of the market, they receive a large amount of custom from people who could buy those things just as well in the country.

2347. Have those persons who come and make these purchases just received their money?—No, they have rather just paid it away. They receive very little in Smithfield; they pay it all away.

2348. Is there anything else that you wish to state?—Nothing else.

[*The Witnesses withdrew.*]

Adjourned.

SATURDAY, March 23, 1850.

GEORGE CORNEWALL LEWIS, Esq., M.P., in the Chair.

Mr. Deputy Hicks, Mr. William Skinner, Mr. Robert Morgan, and Mr. George Jacomb were called in.

Mr. Deputy Hicks examined.

2349. You have expressed a wish to be examined by the Commissioners on behalf of the trade of butchers in the metropolis, and also of the Butchers' Company of the City?—I have.

2350. We shall be happy to hear any statement which you wish to make on their behalf. Under what authority are you here for the butchers' trade of the metropolis?—The trade of the metropolis is a distinct body from the Butchers' Company.

2351. How are you authorized to represent them here?—By a meeting of the trade, called together by public advertisement, at which a very large committee, of some 60 or 70, was appointed, of which I am one; and at the last meeting of that committee I was requested to take charge of the interests of the trade; to appear before a Committee of the House of Commons in 1847, and also in 1849; and, whenever the question was mooted connected with the interests of the trade and of Smithfield market, to appear as their representative.

2352. Where was that meeting held?—At the Butchers' Hall, by the permission of the Company; in the large hall.

2353. At what date?—About two years ago; I cannot give the date now.

2454. But has there been any meeting lately?—No.

2355. Was the authority which you say was given to you two years ago to appear on behalf of the trade of the metropolis given to you generally?—Generally.

2356. Has any special authority been given to you to represent the trade of the metropolis with reference to this Commission?—Certainly not.

2357. Has there recently been any meeting of the Butchers' Company with regard to the inquiry before this Commission?—Yes, last week.

2358. Did you attend that meeting?—I did not, I was unable to do it; but I understood that resolutions were agreed to, and, I believe, transmitted to this office.

2359. Was there any expression of opinion on the part of that meeting that you should give evidence before this Commission?—Nothing of the kind, because I have long held this authority, and it was understood that I was attending this Commission.

2360. Has there been any resolution passed, or wish expressed by the Butchers' Company recently, that you should give evidence before this Commission?—Not since 1849.

2361. Then the authority of the Butchers' Company is a general authority, similar to that given by the trade?—Precisely.

2362. Now, after that explanation, we shall be happy to hear any statement that you wish to make?—A great number of the trade, within the last two or three weeks, have questioned me as to whether I had attended this Commission to give my evidence. I informed them I had had the honour of appearing here some time ago connected with Newgate market, but not upon the subject of Smithfield market. From the anxiety expressed upon the subject, I felt that I was therefore somewhat neglecting the interests intrusted to my charge in not appearing before the Commission. There seems to be a general impression among the trade that no evidence has been taken before this Commission from persons in favour of Smithfield market. I am prepared to state that I do not know half a dozen connected with the trade of butchers who are of opinion that Smithfield should be abolished or removed, but the trade are of opinion that it should be retained upon its present site. The conveniences connected with Smithfield market to the trade at large are so great, and the market has worked so well for centuries, and still does, that they are exceedingly anxious that no alteration should take place, as they feel it would entail great inconvenience and additional expense, and very probably have a tendency to throw a great many of them, as buyers, out of the market. The Butchers' Company, I am aware, are of the same opinion; and I know, and I speak in the presence of a cattle salesman, the great majority of the salesmen of Smithfield market (who represent the interests of the graziers) are

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also of the same opinion, which proves (and it is one of the few subjects that possess such an extraordinary feature) that all parties connected with it are united in supporting Smithfield market, because it works well for all. I am acquainted with a large number of graziers, and I do not know one who is in favour of a removal of the market. The interests of the buyers and sellers harmonize, certainly, to an extent that, perhaps, could hardly be found in any other trade, because, among other reasons, the live and dead-meat markets at present are contiguous, which is a very great accommodation to all parties connected with the sale and purchase of meat. Speaking of Smithfield market, I have, perhaps, given as much attention to that subject (without any egotism) as any man living. For the last 20 years it has occupied the greater portion of my leisure time and study; and I speak it most conscientiously when I state to this Commission that I do not know any site so eminently adapted for a cattle market as Smithfield. If you take it as to its central position, you see that its outlets diverge to all parts, more particularly to the south. The butchers of the northern suburbs certainly are but little connected with Smithfield market as buyers. I do not know if a line were drawn from Islington to Holloway that fifty butchers north of such line could be named who attend Smithfield market; but if I were asked how many attend Smithfield coming south of the Thames, I should think a thousand would be under the number, the difference is so exceedingly great. My opinion as to the site of a cattle market is, that it should be in that position which would give it the opportunity of emptying itself with the greatest despatch and the least inconvenience to the public at large. I am in a condition to state that one-third of the supply of Smithfield market, both cattle and sheep, when sold, are driven over Blackfriars Bridge, which I think is a very strong feature in favour of the position I take as to the present locality being the best. There are also about 800 bullocks weekly slaughtered in the immediate vicinity of Smithfield (the number of sheep I am not prepared to speak upon, but it is large). Now that consumption will take full half the supply of the market throughout the year, and therefore wherever a market might be established, instead of Smithfield, by how much the distance north is greater from the present site, by so much certainly it must increase the driving of cattle through the streets. Then the present site of Smithfield market is extremely convenient of access to the London bankers. Perhaps I am not so competent as others to speak upon that subject, but I am quite aware of the fact that the money-takers two, and three, and four times a-day, are sending cheques and money to the various City bankers, particularly cheques, as it is important for them to know whether they are such cheques as will be honoured. Smithfield market possesses another vast advantage, which is, that its contiguity to the Post Office enables the accounts to be sent off into the country on the same evening of the sale. It is also exceedingly convenient for the corn-market, which is also a very important feature, for there is scarcely a grazier who comes up to attend the one but he wants to attend the other. I believe medical men have given evidence that certainly from the large open space of the area, it is in fact the lung to the locality, the neighbourhood of Smithfield being one of the most healthy places in London. I believe evidence has been given that it is also exceedingly important to St. Bartholomew's Hospital, and to Christ's Hospital. It is also of some importance to farming interests, on account of the hay-market which is held there three days a-week, because I believe there is no other hay-market nearer than Portman market, west, or Whitechapel, east. I certainly think that the business of the market might close much earlier than it does at present, and with mutual advantage to the trade and to the public at large; and if the regulations for drovers were enforced by the police, the public would not feel near the inconvenience they do at present. In contemplating any removal of Smithfield market, I foresee many evils and inconveniences, and with the most impartial judgment I can exercise upon the subject (and I have no partial feeling, because, as I have elsewhere said, and I repeat it now, the removal of the market as far off as should be thought proper would be a personal advantage to myself; but representing the feelings of the trade, and their interests here, I take the public principle of supporting Smithfield market in its present site), I cannot, with every disposition to weigh the question impartially contemplate one single advantage by its removal. I have heard it said, certainly, that it would be advantageous to remove it where lairs could be placed around it. I perhaps sometimes express myself rather strongly, but I can only consider that to be the opinion of an insane person. I am quite satisfied that if all the practical men who are connected with the sale of cattle in Smithfield were canvassed throughout, not one in one hundred would hold the opinion that such an arrangement would be advantageous to him as a salesman, and certainly not to the interests of the graziers. I am quite satisfied that that system which would give facilities for the sale of the cattle would be the most advantageous, and that that which would give any incitement to turning cattle out, would be a very serious injury to the grazier.

2363. What do you mean by turning cattle out?—The locality of lairs around a cattle-market would or might induce inexperienced salesmen or graziers, in preference to selling them, to turn them into such lairs, and this would occasion a very serious loss to them by the deterioration they would naturally suffer before the next market day. I am quite satisfied that the removal of the market to any spot from where it now is would increase the driving of cattle through the streets (probably on the south side it might not in so great a degree), for the 800 head of cattle now weekly slaughtered around Smithfield, and which are not driven one-eighth of a mile through the streets, would still be slaughtered there, let the live market be where it would. The carcass-butchers, as we term the wholesale butchers, would not build slaughter-houses in the locality of the cattle market, but still slaughter in the locality of the dead-meat market; and I think, from every consideration I have been able to give the subject, that there is no position equal to its present central site; I know none that has the sewerage, or that stands so high. I believe it is 48 feet above the level of low-water mark. I know that the sewerage is most perfect. I have been in that market on the evening of the market day; on

Monday, and if I had not known as a fact that it had been market day, from the quiet appearance of the market, and its great cleanliness, I should not have been aware that a market had been held there. I am aware that opinions have been given that wherever the live market might be removed to, the dead market would follow. I beg to differ entirely from that opinion. I have conversed on the subject with those whose opinions I value, and the result of my own inquiries and my own opinion is, that the dead-meat market would not follow the live market, and the consequence would be, if that were the case, that instead of the harmony of action which has ever subsisted between the two establishments, on account of the mutual convenience given to all parties, the markets would become antagonistic.

2364. What is your meaning when you say that the markets would become antagonistic?—Instead of dividing the buyers as they do now mutually from the opportunity of their going backwards and forwards without any inconvenience to themselves, the separation of the markets by a distance of two miles would compel many of the buyers, particularly what we call small butchers, to select one market to attend, and I am quite satisfied that the dead-market would be the market that would generally suit them.

2365. Then you think it quite necessary that the live and the dead-meat markets should be near to one another?—I think it is a great convenience to the trade, and works well for all parties. If my opinion turns out correct the result would be, that a vast many small butchers who buy perhaps but a bullock a-week, or ten sheep, and frequently two butchers living near buy a bullock between them, and divide it when it is dead; these men, I think, would be lost to the live market. It is for the gentlemen connected with the live market to give their opinion upon that subject; but I know full well it is the many which makes the competition; and the result would be, that if they lost a number of those small butchers who generally attend the market, it would throw a greater proportion of the sale of cattle into the hands of the carcass butchers; the result of that naturally would be an increase in the price of meat to the public, and a decrease in the price of the cattle to the grazier, and that would, in a great measure, destroy that competition which now subsists throughout the trade, and by which I submit that the public are greatly benefited. I might, perhaps, be allowed to submit the result of my experience as to the establishing of new markets elsewhere, and the abolishing of old and well-established ones. From that, and from research connected with markets (and I believe there is scarcely a market in London but what I have traced its origin), I have seen the rise and fall of many. I cannot at this moment name a market which has been attempted to establish within the last 30 years that has not been a failure. Fleet market, which I knew for many years, and in which pretty well the whole of the numerous occupiers got a living for their families, was removed into Farringdon market, and I saw the break up of nearly every man who previously got a living in Fleet market after he became an occupier in Farringdon market. Hungerford market was remodelled at a vast expense and started upon the same principle, and a more wretched failure never took place. Among other proposed advantages it was to do away with the inconvenience of Billingsgate, but Billingsgate still retains its trade. Another, called Portman market, was established in my recollection, which is a perfect failure. A market was opened in the New Cut which, after about 12 months, was shut up. Another was opened in Finsbury, on Lord Daruley's estate, where a large market was set up, to which the Corporation gave their assent, and that has been a failure for many years. I seriously contemplate the removal of Smithfield market as a certain failure from the fact of the difficulties of establishing new markets. I am quite aware of the immense outlay which would be required for the purchase of ground, and for the building and arrangements of the market, and the large tolls which would be required to repay such an outlay. I can quite contemplate what would be the feelings of the trade upon the subject. I am quite aware that the strongest opposition they could muster would be given to any attempt of the kind; and if it should ever be attempted to carry such a measure into effect, I do not think it would answer. You are doubtless quite aware that at the present moment there is a legally established open market at Islington, which the trade have hitherto always set their faces against, but which would become immediately antagonistic to any new cattle market that might be set up, and probably with more success than it has hitherto had, because their tolls are, by their schedule, not exceeding the present tolls of Smithfield market. I am quite aware that to enlarge the present market—and to do which I do not see any difficulty—would be an advantage. It is true that the Corporation have taken a wider view of the case than I do, and have submitted to you a plan for a great general public improvement in a very bad locality; although I opposed it, I was out-voted; still, I am quite of opinion that the Corporation have the opportunity of enlarging Smithfield market upon the plan which I submitted to them without any alteration of the site. Certainly, the site of the plan which they have submitted to you by their architect is a portion of ancient Smithfield, and would answer that purpose exceedingly well, no doubt, particularly as respects public convenience. As far as the trade have been made at all familiar with it, it has received their warm support; and though the tolls which would be required to repay the outlay would be heavy for some 25 or 30 years, I am quite aware that the graziers have expressed an opinion in its favour, and the salesmen also; and, from my connexion with the butchers, I am equally aware that they would cheerfully contribute additional tolls themselves to repay the outlay, because the convenience to them would be so very great that they would have a *quid pro quo*, and therefore what they would oppose in a market at a distance, which would be a great inconvenience to them, and add considerably to their expenses, they would cheerfully submit to for a time where they saw their advantage by retaining conveniences which would be utterly lost to them by any removal. I do not know that I have anything more to add upon the subject. I have put my views before you as briefly and substantially as I can, because I know that, with the exception of perhaps some half-a-dozen persons—indeed, I could not name half-a-dozen—the whole trade

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Mr. R. Morgan.

Mr. G. Jacob.

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are most anxious to support the present establishment at Smithfield; and although I am not authorized to speak for the Corporation, I am quite aware that the Corporation are equally ready to make any arrangements which the trade of Smithfield market might require.

2366. The Commissioners wish to ask you to explain a little more fully your expressions with regard to the folly of the graziers desiring more lairage: you said that you thought that none but madmen could desire to have increased lairage close to the market; will you explain why?—The principal of the lairs are at present about a mile and a half upon the average from Smithfield market. If lairs were established around the market the result would be, that cattle would be more frequently turned out than they are at present; sales would not be so readily effected, and instead of a free and open public market of one day a week or two days, it would give an encouragement to a market, in a degree, being held every day; certainly not a market overt, but it would be a private place for the sale of cattle, instead of a public market. Another point connected with the lairs, which, however, Mr. Morgan who is present can explain better than myself, but I state my own opinion, it would have this effect: the cattle coming in from the lairs, come not merely from all parts of the country by railway, but in vessels from abroad, and the result of their journey by railway, and passage by vessels has that effect upon them, that they are frequently so excessively fatigued, that if they were in those lairs close to the market, and brought into the market from them, they would come in such a crippled state with stiffness in their limbs and general fatigue, and altogether so out of condition, it would greatly deteriorate the appearance, and in fact, the condition of the cattle, whereas if they came from the lairs as at the present time, a mile and a half or two miles, driven carefully down to the market, that produces the same effect as walking a horse which has stood and got stiff in the stable for half an hour previously to riding it; it improves the cattle by which the graziers are greatly benefited. Of course the value of the cattle is ascertained by examination, which examination is partly by the eye, but more by the hand; they would handle so differently that I consider it would be exceedingly injudicious on the part of the graziers to place them in those lairs. I have consulted many persons upon that subject, and I have found no opinion different from my own in that respect. Mr. Skinner and Mr. Morgan, who are here, can, I am sure, explain that subject to you much more practically than I can, but from the best judgment I can form, I am quite decided, that lairs adjoining the market would be extremely injurious to the interests of the graziers.

2367. Then the Commissioners understand your opinion to be, that the advantage of having lairs at the distance of a mile and a half from the market would be, that the cattle would be walked thence to the market, and that that exercise would do them good?—Decidedly.

2368. Would it not be equally beneficial to them, then, if they were walked for three-quarters of a mile out and back again, if it be merely exercise that they require?—The walking out and back again would certainly amount to the same thing, but I think that lairs placed round the market would become so worn, so trodden down, and so saturated, that the cattle lying there, and then coming into the market, would be in a very filthy, unsightly condition, compared with their present appearance, from the manner in which they are now housed in lairs with sheds and with pavement: to pave lairs round the market to an extent equal to what would be required for the purpose, would certainly cost 100,000*l*.

2369. How much space do you think would be required to afford adequate lairage?—I am not competent to give an opinion, and I do not like to venture an opinion upon a subject on which I have not sufficient judgment.

2370. Can you tell the Commissioners how much land is now used for lairage?—A great portion of the present Islington market is so occupied; there is Laycock's, which is about 17 acres, but the whole of that ground is not used for lairage; there are Dixon's lairs, and Skinner's lairs in Kennington-lane, others at Mile-end, Bow, Hackney, and elsewhere, but I cannot give an opinion as to the whole extent.

(Mr. Morgan.) Perhaps 40 acres.

(Mr. Hicks.) The lairs to the south, in Kennington-lane, for instance, take the cattle coming south and a great portion from Scotland.

2371. Can you state what quantity is now used for lairage from what you have just heard?—I can only tell you where the lairs are which I have seen, but I could not give you the quantity of the measurement.

2372. Not exactly, but within 10 acres?—I should say, that there cannot be less than 40 acres used at present.

Mr. Morgan.) About 10 or 11 acres very much crowded will hold from 1,600 to 1,700 beasts.

2373. (To Mr. Hicks.) Can you tell us what were the views of the Markets Committee when they proposed to make a provision for lairage adjoining to their plan of a new market?—It was a part of their plan that Smithfield market should close (and I opposed them in that, but they out-voted me) at ten o'clock in the morning. I thought 12 was soon enough, but their plan was that no cattle should go out after 10 o'clock in the morning, with a view of preventing the driving of cattle in mid-day, and with that view, lairage was to be formed around the market, to which the sold cattle could be driven to remain till they should go out in the evening; none were to go out after 10 in the morning till six o'clock in winter, or eight o'clock in the evening in summer; those lairages were for the accommodation of the cattle sold after the time of the cattle going out in the morning, there to remain till the cattle were allowed to go out in the evening or early next morning.

2374. Is there anything further that you wish to state to us?—As the Commissioners have asked me a question connected with the Committee of the Corporation and Smithfield market, I perhaps may be permitted to say, that the Select Committee deputed to confer with this Commission have been somewhat disappointed, that they have not had the honour of another

conference since they sent you down the model they had had prepared. I am not authorized to say anything upon the subject, but as you have asked me a question connected with that subject, perhaps I may be permitted to say, that although they have sent you one model, they have other plans before them for the enlargement of the present site.

2375. That plan has not been submitted, we understand, for the approbation of the Common Council?—No; the matter is referred to the deputation, in order to confer with this Commission, and then whatever this Commission should approve of the Committee would report to the Common Council.

2376. Have that Committee full powers from the Court?—They have full powers to confer with you. You are doubtless aware that no Committee of the Corporation ever concluded a subject with another body to which they were appointed a deputation to confer without its first being submitted to the Common Council.

2377. Have you any idea that the Common Council would refuse to confirm any recommendation of report of the Committee?—I have no hesitation in saying, that whatever the Committee and this Commission should agree upon, the Common Council would confirm.

2378. Subject to our approval?—We believe that whatever this Commission and the Committee should agree to would be acceded by the Common Council.

2379. Do you mean, in speaking of the cattle going over Blackfriars Bridge, the cattle coming to the market or going from the market?—Going from the market.

2380. Supposing a market were established to the north of the river, and held on two days in the week, say Tuesday and Saturday, what would be the effect of establishing a market on the south side of the river, say on the Thursday?—It would decidedly settle in six months on one spot; there cannot be two opinions upon that subject among practical men.

2381. If Smithfield market were to be removed more northerly than it is, and a market were also to be established southward, you mean to say that one market would swallow up the other?—There would never be more than one market.

2382. Even if they were held on different days?—Decidedly. There is a market at Southall that belongs to Mr. Giblett, but it is a bankrupt concern. There is a small market at Croydon, but it is chiefly for calves and sheep. There is a market at Romford, but that is quite dead, entirely dead. I should say that Smithfield now supplies nearly the whole of the county of Kent, a great portion of Surrey and Sussex with fat cattle, and a great portion of Hampshire and Berkshire, and they all go over Blackfriars Bridge; even the Westminster butchers have their cattle driven over Blackfriars Bridge, instead of through the principal streets on the north side of the river.

2383. Do you think that if the plan proposed by the Markets Committee for establishing a new market were carried out, the increased tolls that the Corporation would require to defray the expense would have any considerable effect upon the price of meat in London?—Not the value of a straw.

2384. So that it would not increase the price of meat one farthing in a pound?—Not one farthing in a hundred stone.

2385. Supposing Smithfield market discontinued, and the market moved northerly, would that increase the price of meat to the consumer?—Yes, it would, because I am satisfied that it would throw out many of the small butchers, and throw the sale into the hands of the large carcass-butchers, who, as middlemen, would take a profit which now is cut down to so small a sum that to my knowledge carcassing is not worth following, and that would be to the injury of the public on the one hand, and the grazier on the other.

2386. Is your reason for that opinion what you stated to us just now, that the little butchers would attend the dead-meat market, and not the live-meat market?—Arising in a great measure from that—indeed chiefly.

2387. But supposing that there were a dead-meat market, as well as a live-meat market established somewhere at the north of the town, would that enable the little butchers to attend?—You must excuse my dividing your question into parts; you may build a market anywhere, but the establishing it is another thing; it is not the killing of so many bullocks, and so many sheep, and putting them there for sale that would make a market. No market can ever be established consisting merely of carcass meat, that is, meat bought by the carcass-butcher in the live market, and killed and sold in the dead. The reason that Newgate market has so increased in trade arises, in a great measure, from the carcass-butchers having premises built where they can slaughter their own cattle, and sell the meat at a profit, notwithstanding the commission and the charges they have to pay by sending it to Newgate market. They can get a better price by sending it to a market where a crowd is collected to buy country meat than by selling it on their own premises.

2388. Would not an advantage arise by having a railway so as to send the meat straight into the market?—I do not see that; it would be a convenience one way, but a considerable inconvenience another.

2389. In what way would it be an inconvenience?—Because it would create at times very great confusion; it would come at uncertain hours. The delivery from railways is the most uncertain we have.

2390. Is not the delivery now by railway to Newgate market?—A very considerable portion is.

2391. Is there any other remark that you wish to make to the Commissioners?—I am not aware that anything else occurs to me at the present moment. I only wish, most respectfully but very strongly, to impress upon the Commissioners the danger of interfering unnecessarily, which I am satisfied they will not do with established markets. Smithfield market I can trace for upwards of eight centuries, and I think it is to be traced considerably further back. Much has been said by the press, but I have never thought it worth noticing.

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Mr. W. Skinner.

Mr. R. Morgan.

Mr. G. Jacob.

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Mr. Deputy Hilda.
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Mr. G. Jacob.

and heard about its having been placed by our ancestors in the suburbs: it never was out of the City liberties from its first establishment, and it is there still. I have a paper at home with the names of some 40 or 50 towns and cities in which the markets are held in the principal streets, and I believe it ever has been considered for the benefit of the trade of a place that a cattle-market should be held therein. Upon the subject of the Corporation, I am quite aware that their entire support of Smithfield market arises from their conviction of the benefit it is to the citizens of London, as part and parcel of the trade and commerce of the City of London; and I know it to be so. I am acquainted with many persons upon Ludgate Hill and other parts of the City who have connexions coming to Smithfield market which they have formed from their vicinity to that neighbourhood; and I am satisfied that the loss to them if it were removed would be very great. It is very true that they would be entitled to compensation for losses which they might sustain. I believe in the Report of the Committee of 1828 it was an admitted point that the innkeepers and others carrying on trade in Smithfield market would, if it should be removed, be entitled to compensation. But still, after all, compensation, however sweet it may appear, is very poor compared with the means which men have of getting their living.

2392. Can you name any large town in which the cattle-market is held in one of the principal streets?—Chichester; but I have a paper at home, and if the Commissioners think proper I will send it to them.

2393. Are you aware of the number of markets lately erected in the principal towns in England?—No, I am not.

2394. Were you ever in Liverpool?—No.

2395. Are you not aware that in Liverpool the cattle-market is held immediately out of the town, and that it answers perfectly?—I am not aware of it; but I have been given to understand that the Liverpool abattoirs have brought nuisances into the neighbourhood that were never there before, and that the inhabitants are very desirous of getting rid of them.

2396. But you were understood to state just now that you were acquainted with many large towns in which cattle-markets existed in the centre?—No, I beg your pardon. I said I had a list of cities and towns (which I have at home among my papers) where the cattle-markets are held in the streets.

2397. Do you mean provincial towns in England, or capital towns on the Continent?—I mean cities and boroughs.

2398. In England?—Yes.

[See also Mr. Hicks' answers 2479-80.]

Mr. Robert Morgan examined.

2399. What is your business?—I am cattle salesman in Smithfield market.

2400. Are you in the habit of attending Smithfield market?—Every Monday and Friday throughout the year.

2401. Is there any statement you wish to make to the Commissioners?—The statement I should wish to make would be, that I consider Smithfield the best place for the market to be held at. I should also be happy to answer any questions put to me.

2402. How long have you been a salesman?—About 13 years upon my own account.

2403. What are your reasons for thinking that Smithfield is the best place for a market in the metropolis?—I have attended most of the large markets in England and Scotland, and, I may say, in Ireland; and I cannot see any market that has been carried out on the same principles as Smithfield market, and the business done with so little trouble and with so little expense; and that of course leads me to suppose that in a very great measure Smithfield market is in a very excellent site at present, and I think it being close to Newgate market very much facilitates the business. Another thing I am quite sure of as to moving Smithfield market is this: I quite agree with Mr. Hicks in saying that it would decrease the competition very much in taking away many of the small butchers whose attendance now makes Smithfield market so very valuable as a market.

2404. Would that diminution of competition, in your opinion, raise the price of meat in the metropolis?—I certainly think it would; it would throw the trade entirely into the carcass butchers' hands, and by that means I consider the price of meat would be increased.

2405. Is it your opinion that Newgate market, or a large dead-meat market, would cease to be held in the metropolis if Smithfield market were removed?—I think not.

2406. Then if a market of that kind were still kept open, how would the trade fall into the hands of the carcass-butchers?—Newgate market now being close to Smithfield market is a market which exists for the sale of all descriptions of meat, country killed as well as town-killed meat; and the butcher now of a morning has the opportunity of going backwards and forwards to those markets to suit himself. If you remove one, or provided the two markets are divided, and placed at a distance from each other by that means, he would say, "I cannot afford the time to attend each market;" and therefore, instead of buying what little meat he would require, part alive and part dead, he would buy it all dead.

2407. Then you think it is for the benefit of all parties that the two markets should be near one another?—I certainly do.

2408. Supposing the cattle market were removed, do you think the dead-meat market would naturally follow it?—I think not. I do not think it would be established very easily upon any other spot than where it is; it is quite impossible to say whether or not it would be established, but I should imagine there would be a great deal of difficulty if it was.

2409. Assuming that the cattle market were removed from Smithfield to some place in the north of the metropolis, would it be more convenient to the trade that the dead market should

remain where it is in the City, than that it should be transferred to some place near the site of the cattle market?—I should say it would be more convenient where it is, for this reason—that the south-side butchers would scarcely have the possibility of getting to a market much further north, and getting home to their business in time.

2410. (*To Mr. Hicks*). Do you agree in that opinion?—Yes; our dead-meat market is open every day, the West-end butchers take by far the largest weight of meat, but by far the most numerous attendants on our market come from the south-side of the Thames, numerically speaking; the West-end men come not so frequently as the others: many West-end men come but two days a-week or three days a-week; but the butchers from the south side, and you may take a line from Woolwich across Blackheath, and away over to Streatham and Wandsworth, are attending more or less every day.

2411. (*To Mr. Morgan*). What would be the amount of your weekly sales?—I have a partner, Mr. Vorley, and our sales are about 400 beasts a-week: we do not sell sheep.

2412. Have you, from your own personal knowledge, the means of stating what the opinion of the graziers would be as to the removal of Smithfield market to any other place, and abolishing Smithfield market?—I know very well that I have taken the opportunity of asking them upon all occasions when I have been in the country, and I may say that almost all are now in favour of Smithfield market. There was a difference of opinion once existing at the time of the introduction of the Islington market; but it was so great a failure, that it was a proof to them that the present place was the best, and they are now, I may say, one and all in support of Smithfield market.

2413. Then as to the buyers, have you any means of knowing their opinion?—The buyers decidedly are in favour of the present market. I think there would be a very great difficulty in finding half a dozen butchers in the trade who would not support Smithfield market.

2414. I will read to you question 847, and the following questions with the answers of Mr. Hicks:—"Who are your principal customers in Newgate market?" he says, "The West-end butchers are our principal customers. What is the proportion of the purchases of the West-end butchers to others?—Two-thirds of all the prime meat that comes to Newgate market is bought by the West-end butchers. Besides the West-end butchers, who are your principal customers?—They come from all parts—from the suburbs, Surrey and Kent; very few from the east end." Are those answers correct?—(*Mr. Hicks*). That is quite the same as I am now stating. I say two-thirds of the weight of the prime meat, and I repeat that now, goes to the west end; but the southern men buy the meat even through taking the coarse parts which the West-end men will not buy, that accounts for the one-third and the two-thirds of the prime meat.

2415. (*To Mr. Morgan*). What is your opinion as to establishing lairs round the live-meat market being an advantage to the graziers?—Not at all an advantage. I should say, in fact I think the graziers would be very much opposed to it personally, for each salesman at the present time has a favourite place to send to; there is a very great deal of difference in the places which they send them to, the grazier has every confidence in his salesman; he has a place provided for them, and they are sent to those places, and they are taken great care of in those places by the person who has the control of them; for instance, if they have a large number of beasts, they do not mix them indiscriminately together; but if they were to be sent to large lairs, and mixed with a large quantity of beasts, some would get hay and some would not, and they would suffer in consequence. I quite agree with Mr. Hicks in saying that the distance they walk, a mile and a half or two miles, when the beasts are well, does them good; they are quite as well to walk, and no person can perceive at the time they arrive any difference whether they walk one or two miles into the market or not; no one can tell that they are the better or the worse for it. In fact, when beasts come in from the railway, a walk does them good. I had some yesterday from Birmingham; they had had no opportunity of lying down; they came in direct from the railway at four or five in the morning to the market: those beasts were tied up, and I consider that they were not shown in a proper state. I had them untied and sent them to my lairs four miles away, and I undertake to say that those beasts will show in a better state on Monday than they did on Friday. Now if I had taken those beasts to a place adjoining the market, they would have lain down in that state, and would not have got up again for many hours, and would not have attempted to eat anything. They had been in the railway train very likely eight or ten hours, and as a matter of course they must be distressed by standing that time, but they soon recover.

2416. What amount of lairage should you think necessary for the quantity of cattle that comes to Smithfield?—If it were compulsory that all the beasts and sheep should be laired round the market, I do not know how it could be done, because in certain seasons of the year, for instance, in summer-time, the beasts must eat grass; they cannot get hay: it would require some 150 acres of land for the beasts and sheep; but I calculate from the quantity of beasts I have on my lairs now, that it would require about 80 acres of land to have lairage for the beasts and sheep which come to be laired. I have scarcely half an acre of ground now of my own, and I lair 100 beasts upon this half acre, and when I have 100 beasts there, it is quite as many as I can fairly put in the lairs.

2417. Are they tied up?—No; it would not do to tie them up. I may say that nine out of ten beasts now are fed loose, and those that are fed loose, if you tied them up, it would worry them so that they would not eat.

2418. Do you sell foreign cattle?—Yes.

2419. Is Smithfield market conveniently situate for them?—I should say decidedly so in connexion with the lairs, having them by steam weekly, with the opportunity of getting them to the lairs at as little expense as possible, that is, a shilling a night,—that is the average cost

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to the grazier to get them into the market; they are there on the Monday morning, and possibly a very large number come in on Thursday and Friday morning.

2420. What is the charge a-night for the lairage of beasts?—One shilling; it is the regular charge.

2421. If at any time the market was dull, and the seller not being willing to accept the price of the day, a great quantity of cattle was sent to the lairs, and the supply in consequence the next market day came forward, showing the dealers an increased quantity of stock, would not that very materially injure the grazier?—Very much indeed; the butchers take the opportunity of that now. If they know there is a large market, they are not very long before they let us as salesmen know that they are aware of that in buying. They do that as a matter of course.

2422. If there were much cattle left not sold at the last market, then the grazier would not send up more cattle for the next?—Oh, yes; a grazier grazing 100 beasts has a time when he commences sending them away. He sends a truck a-week. He sends six or seven of them weekly till they are all gone. It would very much put him out if he had to hold them over two or three weeks on that account, and then to send 20 or 30 together.

2423. What is your opinion as to the space of the present Smithfield market for the convenience of showing the beasts?—As to the present space, I should say it would be an improvement to have it enlarged, but certainly too much room would be a greater evil than too little, more particularly at this time, as I said before, because so few are tied now in grazing to what there used to be, and if they had too much room, it would be almost impossible to handle them. There is full opportunity now; every day I have an opportunity to tie 150 or 160 beasts, and as soon as I have sold 40 or 50, which may be in the centre of my stand, I make my men immediately bring up the others and fill up the spaces, so that I can sell more quickly; and it is necessary that the beasts should be tied closely together, that they may not injure one another.

2424. Too large a space would be an inconvenience to both buyer and seller?—Most decidedly.

Mr. William Skinner examined.

2425. Are you a master-drover and cattle-dealer?—Yes, employing 10 or 12 men from the country, and likewise in London.

2426. How long have you been acquainted with Smithfield market?—Between 40 and 50 years.

2427. What is your opinion about Smithfield market?—I have always considered it the best place, there being so many avenues into it, and its being nearer to the Surrey side of the water where there is a great portion of the cattle sent.

2428. What do think would be the effect of removing the cattle market from Smithfield to some site on the north of the town?—We have now a difficulty in getting them in, as many come up in the morning by the southern railways, and it frequently happens that we cannot get them into Smithfield market now till something like seven or frequently eight o'clock. We have four miles to come from Vauxhall to Smithfield, even now, and had we to go further to the north, it would take a much longer time.

2429. Is there not a set-off to that, because there are some railways nearer to the north side?—Yes, but our cattle do not come that way; we are speaking of the Surrey side, taking Kent, Surrey, and Sussex.

2430. What do you think is the most convenient place for the dead-meat market?—Certainly, I should think Newgate market; there cannot be a more convenient place, it being near to our live market.

2431. Do you think it advantageous that the cattle market and the dead-meat market should be near one another?—I think there is no question of that.

2432. Supposing the cattle market were removed to the suburbs of the town, would it be desirable that the dead-meat market should follow it?—I think there is no question that the nearer they are in connexion the better.

2433. Then your opinion is, that it is not convenient for the trade of the town that the dead-meat market should in that event be within the City?—I am sure I do not know how that would be. I think, wherever your live market is established that the dead market should be as near to it as possible.

2434. Your opinion then is, that the cattle market being in Smithfield, Newgate market is the most convenient situation for a dead-meat market?—No question of it.

2435. But that if the cattle market were removed to the suburbs, it would be convenient that the dead-meat market should be removed with it?—It would, in my opinion, be most undesirable that the principal meat market should be in any situation that was not as perfectly central as possible, and I do not think it could be removed to any of the suburban districts without causing the greatest possible inconvenience to the trade. So that I do not know which would be the worst evil, to leave Newgate market where it is, when Smithfield was removed to a distance, or to remove the meat market to a new site. The two markets should, I think, be as near together as possible, for the sake of the small butchers, otherwise, as these gentlemen have stated, it would do away with the small butchers who could not attend both markets.

2436. Is there any other remark which you would wish to make to the Commissioners?—With regard to our Kentish cattle and the sheep that are sent out of Kent from Romney

Marsh and all that side of the country from which a very large supply comes at certain times of the year, they are very heavy sheep, and there is a difficulty in driving them even from the Half-way House in the Kent-road to Smithfield.

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2437. We apprehend from the tenor of your evidence, that your business lies in the south London?—It does; I am speaking of the south.

2438. Your business lies principally on the south side?—Entirely on the south side.

2439. About how many drovers are employed in taking cattle over Blackfriars-bridge?—I should think, 200 or 300.

2440. In taking cattle into Kent, Surrey, and Sussex?—Yes.

2441. Do you know the markets in those counties?—I do.

2442. Then you mean to say that your experience is in favour of Smithfield market, from the convenience that it affords for passing over Blackfriars-bridge?—Yes, I do.

Mr. George Jacomb examined.

2443. Are you a butcher?—I am a retail butcher.

2444. Where is your shop?—In Great Marylebone-street.

2445. You were examined by the House of Commons Committee of last session?—I was.

2446. Were you examined also in 1847, or did you send a paper of observations as printed in the Report of 1847?—I did.

2447. Have you anything to add to the evidence you gave before the Committee of last session?—I did not know that it was then contemplated to remove the market only. I think the question had as much reference to the abolition of the slaughter-houses, as to the removal of the market; but if it should be removed to a more distant site, and lairage established around that market, the character of the market would be completely destroyed; it would be rather a repository for fat cattle than a public market. I think it would have that effect in a short time, because the sellers of stock would have such facilities for holding over and refusing a price, having the convenience of lairage, if that is provided on the same site, that they would hold them back on the market day if they did not like the price that was offered, and practically there would be a market every day in the week, because the salesmen would be sending for butchers every day in the week to come and look at stock, and the consequence would be, that some men would be frequently going to the market on other days to buy stock, instead of having, as it is now, an open market on fixed days only, without favour to buyer or seller. I think, strictly speaking, cattle-markets should consist of nothing but pens and rails; that there should be no accommodation for buyers to go at other times, or for sellers to feed the cattle in the market, which I view as injudicious in every way. There is no cruelty in the present system of Smithfield market in not giving the cattle anything while there; on the contrary, I think it would render them unfit to travel to their destination, and do them a great injury if they were fed.

2448. It is your opinion then that no lairs should be provided for the cattle, adjoining the market at the public expense?—Exactly so, if the sellers want accommodation of any kind, they should seek it as they do now; they have now the power to enter into any arrangement in this way with those who have lairs. If I have some cattle that I want to turn out, I want some accommodation for them, which is exactly the origin of the present lairage; it arose in that way, men who require accommodation for cattle to be turned out must have to stand at the inconvenience and the loss and deterioration of the cattle, which arises from their being kept from one week to another; and all that induces them to sell if they can, which is for the convenience of the trade and the public at large.

2449. Is it not an inconvenience, as it regards Smithfield, that there is no accommodation for placing cattle in private lairs in the immediate neighbourhood?—I do not think that is an inconvenience in any way, as it must be advisable to encourage selling rather than holding, and I think it is a benefit to the owner that the cattle should walk a mile or two to the market; they show to much greater advantage. If you go into lairs where cattle are lying down, they do not show themselves well and advantageously; they want to be got up and walked about a little before they look well; they are stiff and awkward, and do not show themselves to advantage. When the market is over, they may be taken to any place at any distance that the owner chooses to provide for them. I think they are no friends to our trade, or to the great body of consumers, who are desirous of having lairage round the market.

2450. What is the principal disadvantage which you anticipate from the removal of the cattle market to a place in the north of the town?—I think decidedly that the number of buyers would be less; it would be attended with very great inconvenience to many small buyers to attend there, and consequently there would not be so many purchasers. The cattle would be sold, it is true, but to the carcass-butchers it would not be worth the trouble and expense to some of the small butchers, who did not want more than one beast a-week, to go one, two, or three miles further than at present; the loss of time would be great, and he would probably prefer to buy it dead in Newgate market from the carcass-butcher.

2451. Suppose he did, how would that effect the price of meat?—The carcass-butcher would have remuneration for his trouble and for his capital, and a living profit, whatever it may be; and that would be the interposition of a third party between the consumer and the seller which does not at present exist.

2452. Is there not now a very large sale of meat in Newgate market?—Yes, there is; but if the carcass-butcher who seeks to sell it to the retail trader (who does not want to buy at Smithfield market) does not offer to sell it at the Smithfield market price, or so near as to be within a fraction, the butcher would go to Smithfield market himself; but, on the other hand,

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if going to Smithfield market when it was removed were to be a matter of personal inconvenience or expense to the retail butcher, he would reason thus, "I may as well pay that little expense to the carcass-butcher," and he would not go.

2453. Why should not the small butcher buy, upon your supposition, in the meat market of the salesman and not of the carcass-butcher?—He buys wherever it suits him: he either buys of the salesman or of the carcass-butcher: he does not care whether it is the one or the other. There are many carcass-butchers who occupy stands in Newgate market to sell their own meat, and who use the salesman's scale, or have one of their own; but the butcher buys wherever he likes, of one or the other; it makes no difference to him in the cost price.

2454. You view the disadvantage of removing Smithfield market in this way,—that there would be an increased price charged for the meat, on account of parties having the inconvenience of going a greater distance to the live-stock market than they now have?—I do not say that it would make the meat dearer itself, but if the butchers are driven, by the inconvenience arising from the removal of Smithfield market to a distance, to seek their supply of the carcass-butchers, who at present indeed are few in number, as almost all the butchers buy at first hand now, it will throw the trade into the hands of the carcass-butchers.

2455. Then you think there would be a great inconvenience in having to go a mile or two miles further to the live-stock market?—I do. I think that the butchers, generally speaking, would not go more than one day in the week, whereas they now go both days; it is so near that they can walk from the one to the other immediately; if they are disappointed in one market, they can go over to the other without loss of time.

2456. Is it the fact that most butchers attend Smithfield market on the two days in the week?—At certain seasons of the year they do, particularly in warm weather, and in the veal and lamb season, then most of the butchers attend the live market on both days.

2457. What is the difference of distance from your house as between King's Cross and Smithfield?—Oh, I think perhaps King's Cross, of the two, is the nearer from my house, living in Marylebone.

2458. And to the West-end butchers generally?—And to the West-end butchers who live in the north-west.

2459. In what part of town would the small butchers suffer inconvenience by the transfer of the site to the north?—In order to distribute meat all over the trade of London, taking the whole of the metropolis, you are nearer to everybody at the centre; whereas if you take it to one side, then many men will have double the distance to go, and it will take a great deal more time when you are distributing the meat than if it were in the centre: the centre would be the nearest to every man's house. I have seen the French markets, and there appears to be no competition at all there, owing, as I think, to the distance from the capital. There is no bustle, no activity. There are a few leading men, but the business all goes on in a very tame, quiet manner: it is mere child's play compared to our business to see them do their trade: there is no hurry or bustle, but they walk in and out as if scarcely anything were going on.

2460. Do you think that the difference between English buying and selling and foreign buying and selling is confined to the cattle-market?—It may be their system in everything; but I am satisfied that the difference between their cattle-market and ours is extraordinary; I paid great attention to it. I went into the cattle-markets, and into every place connected with them.

2461. You carry on your business in Great Marylebone-street, do you not?—Yes.

2462. How many years have you been there?—I was born there, and my father lived there before me.

2463. How long an experience have you had of Smithfield market?—I have attended Smithfield market for 35 years regularly.

2464. Do you supply the nobility and gentry?—Yes; my trade is a private-family trade entirely: mine is not a large trade.

2465. You have had experience of Smithfield market in its worst condition?—Yes, I remember it well, and it is very much improved. In my opinion, the alteration of the day only from Friday to Thursday would be equivalent to an additional acre of ground in less than a year or two.

2466. What do you think of altering the day from Monday to Tuesday?—I think that would be injudicious. For a great portion of the year, Friday is too near to Sunday; Thursday would be the best day. Most persons, in accordance with English habits, cook their best dinner on the Sunday, and Thursday would be a better day for that supply.

2467. Will you give your opinion as to the present state and management of Smithfield market?—I think that the present arrangement and management of Smithfield market is as complete as anything possibly can be. I am in the habit of attending the market, and I go there at a very little expense, and I get my stock home at very little expense. I scarcely expend a shilling on a market day; I know that I never do for my personal expenses, in consequence of the convenience of the situation.

2468. Do you think that the arrangements made by the City authorities for the management of the market, and for the police, and the cleanliness of the place, are as good as the nature of the situation admits?—I think they are as good as they could be anywhere. If the market were a little enlarged it would be better, and if there were a good opening made into New Farringdon-street that would very much facilitate the ingress and egress of cattle; in every way I am satisfied that benefit would result from that: otherwise, I think the market is exceedingly well managed in all respects, and I should be sorry to see it removed elsewhere.

2469. In your judgment is the trade generally of that opinion?—I think it is universally so, except as to one or two, and their opinions are a matter of surprise to the trade; they cannot account for it.

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2470 Do you think Newgate market is equally as good as Smithfield market?—I think Newgate market is rather small, rather crowded, in some respects at times; but it is so convenient in its situation though it may be small, and an increased space in the market would certainly be of some advantage; yet, if you were to remove it further north, even if you were to make it twice as large, it would not be so convenient to the trade as it now is.

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Mr. G. Jacob.

2471. Supposing the cattle market were removed to a place north of the town, do you think the dead-meat market would naturally follow it?—I do not.

2472. In the event of the cattle market being in some suburban situation, where would be the most convenient place for the principal dead-meat market?—I think wherever you put the cattle market the dead-meat market would always be pretty nearly where it is, or it ought to be, as a central market, because it is resorted to by all the trade or nearly so. A great number of butchers from the country go there for their meat, therefore it ought to be, as it is, surrounded by the railways on every side; immense quantities of meat come there from all the country districts daily, therefore, a central situation must be the most convenient, either to receive the meat or to distribute it when purchased by the retailers.

2473. Supposing a dead-meat market were to be continued in the City, and there were also provision made for a dead-meat market near the live-cattle market in the suburbs, do you think the latter dead-meat market would be frequented?—I do not think it would be much used as a market if there were one in the City, or near the City; you may have a dead-meat market near the suburbs, but I do not think it would do much business. I do not know what should make any one who lives in or near the City go to the suburbs for their dead stock.

2474. The Commissioners understand you to say, that some of the smaller butchers who now purchase in Smithfield market and also in Newgate market would not go to the live market if it was two or three miles away?—I do not think they would, the inconvenience would be so great; but I think that an alteration of the market-day from Friday to Thursday would be an immense benefit to men in business, and would encourage competition in the live market to a very great degree; a great number of the men who are now driven to the carcass-butchers on the Friday would prefer to go to Smithfield if they could buy an ox on the Thursday; but Friday is too late for their purpose, because, in the first place, they would have to kill it the same day that they bought it to be ready for Saturday, and it would not look so well on the Saturday, and it would be too fresh for Sunday's use, whereas could the small trader buy an ox on the Thursday he would have ample time to prepare it and get it ready for Sunday's use. Another advantage to a man of small means would be this, many families are in the habit of paying their bills weekly, but not in time for the Monday's market, which is early in the morning, but by Wednesday evening the small butcher has taken, perhaps, one-half or one-third of his weekly bills, and he has, therefore, money to go to market with on the Thursday, which, if he is a man of small means, is of great advantage to him.

2475. Is beef generally eaten so soon after it is killed as from Thursday to Sunday?—It is in the small retail trade, what we call the chance trade; those butchers cannot sell stale-looking meat; butchers who sell as I do to private families can hang their meat a fortnight or three weeks, and upon the faith of the tradesman the cook or the customers will take it; but if chance-trade butchers hang it for a few days they cannot sell it to advantage, it loses its appearance in a certain degree, the public are afraid of it; but where there is confidence in the tradesman, the appearance is not a matter of so much consequence.

2476. Do you think the price of meat would be enhanced by the dead-meat market being removed two or three miles distance from where it now is?—Well, I do not know; I think the price of meat would be enhanced by any encouragement of the carcass-butchers; at present they are a convenience to the trade, and necessary to those who only want small quantities, or have not the means of finding ready money to go to Smithfield with. The carcass-butchers are an accommodation in that way, but if they once gain an ascendancy by the removal of the market and the abolition of the slaughter-houses, they would have great influence over the retail trader if he were not allowed to kill at home.

2477. So that that, you think, might cause an increase in the price of meat to the public?—I think it would, decidedly; the carcass-butchers take their profit of the retailers, and give them credit occasionally, and so forth. You will find that, owing to such causes, meat is always as dear in Paris as it is in London, though much worse in quality.

2478. Have you anything also which you wish to state to the Commissioners?—I do not know that I have.

2479. (To Mr. Hicks.) Do you wish to make any further remark?—One word as to the question put to Mr. Jacob, respecting making accommodation for a dead-meat market in the neighbourhood of the live meat market some two miles north. I merely wish to state why I am of opinion that would not answer. The cattle market being held but one day in the week, and the dead-meat market every day in the week, such a market would have no frequenters or buyers there for five days out of six; for although Friday is a cattle-market day, yet at times of the year it is so trifling as to be of little account. My son yesterday had 25 oxen at Smithfield, and was in the market for about five hours and sold but one bullock. A salesman can sell 100 on Monday as soon as he can sell five on Friday.

2480. Then your meaning is, that during five days in the week the business of Newgate market is quite independent of Smithfield market?—Decidedly; we are a vast deal more independent of Smithfield market than Smithfield market is of us.

(Mr. Jacob.) May I be permitted to say that I hope the trade, or its markets, will not be thrown into the hands of any public Company, but either into the hands of the Government or the Corporation.

2481. Which should you prefer, supposing a new cattle market were established, would you rather see it in the hands of the Corporation of the City of London, or in the hands of some

March 23, 1850.

Mr. Deputy Hicks.

Mr. W. Skinner.

Mr. R. Morgan.

Mr. G. Jacomb.

commission appointed by Government?—Well, in those two cases I scarcely know how to choose, but I think the Corporation of the City have never made it a matter of profit in any way, they have never sought it at all, and I apprehend that Government would not. The Corporation have certainly very fairly conducted it, and at the least possible expense; the charge on the public is no more at this present time, and indeed less, than in any market in the kingdom; if we were in the hands of any private Company whatever, of course there would be a motive for profit.

2482. Is there anything in the management of Smithfield market by the Corporation of the City of London which leads you to think that they would more efficiently manage the live-stock market, wherever it might be situate in the metropolis, than any other body?—I think they would; I think if it were in the hands of the City they would manage it efficiently, and to the satisfaction of the trade. I have no doubt that if they were compelled to take it from the present site we should still prefer the City as masters; they have never done anything without consulting the wishes of the trade in every possible way. I think that if Mr. Perkins, when he obtained his Act for the establishment of Islington market, could at the same time have abolished Smithfield market, it would have been worth 200,000*l.* a-year to him; if you look at the immense charge for lairage, and at the charges connected with the scheme from beginning to end, you will perceive he would have made a large profit from the cattle market, all the lairage would have been in his own hands.

2483. Was not he bound to compensate the City for any loss they might sustain?—There was something of that sort said, but he had the power of making bye-laws; if cattle remained in the market after a certain time there was a charge of 6*d.*, or, for the whole night, 1*s.*, and tolls from all parties frequenting it with carts, &c.

[*The Witnesses withdrew.*]

Adjourned.

APPENDIX.

APPENDIX.

1. LETTER to Mr. SERGEANT MEREWETHER, the Town Clerk, requesting a communication with the authorities of the City, and the Town Clerk's reply.

1. Letter to Mr. Sergeant Merewether, Dec. 5, 1849.

*Smithfield Market Commission, Home Office,
5th December 1849.*

SIR,

I AM directed by the members of the Commission appointed by Her Majesty for inquiring into Smithfield Market, to inform you that they are desirous of conferring with the City authorities upon the subjects embraced by their Commission; and I am to inform you that the Commissioners have appointed a meeting for the purpose on Tuesday next, at 12 o'clock, and to request that the authorities of the City will have the goodness to appoint a deputation to meet them at that time.

I am, &c.,

SAML. REDGRAVE, *Secretary.*

SIR,

Guildhall, 7th December 1849.

I BEG to inform you that your letter of the 5th instant, requesting the appointment by the Corporation of London of a deputation to confer with the members of the Commission appointed by Her Majesty for inquiring into Smithfield Market, was laid before the Court of Common Council yesterday, who referred it to the Markets Improvement Committee, with powers to appoint a deputation for holding such conference with the Commissioners.

I am, &c.,

S. Redgrave, Esq., Secretary.

HENRY ALWORTH MEREWETHER.

2. LETTER from the City Remembrancer, enclosing a Report of the Deputation appointed by the City to confer with the Commission, and accompanying Appendices.

2. Letter from the City Remembrancer, March 5, 1849.

SIR,

Guildhall, 5th March 1850.

I AM directed by the Deputation of the Markets Improvement Committee of the Corporation of London to transmit to you, for the information of Her Majesty's Commissioners relative to Smithfield market, a copy of the Report of the Deputation to the Markets Improvement Committee, with several Appendices.

The Deputation will be happy to wait on Her Majesty's Commissioners at any time they will appoint, upon the subject of the Report, and will bring with them the model of the proposed improvements.

I am, &c.,

Samuel Redgrave, Esq.

E. TYRRELL, *City Remembrancer.*

To the Worshipful the Markets Improvement Committee.

WE, whose names are hereunto subscribed of your deputation, appointed on the 8th day of December, 1849, to confer with Her Majesty's Commissioners for inquiring into Smithfield market and markets in the City of London for the sale of meat, and to report our opinion thereon, do certify that, in pursuance of our report of the 13th December, 1849, and the report of your Committee thereon, and the order of the Common Council of the 20th December, 1849, we waited again upon the Commissioners on Tuesday, the 19th instant, and read to them the following statement:—

In addition to the plans already forwarded to the Commissioners for Smithfield and the meat markets, at their request, the Deputation of the Corporation of London, appointed to communicate with the Commissioners, now wait upon them in pursuance of Mr. Redgrave's letter, for the purpose of submitting to their inspection a new plan for Smithfield market, which embraces the following objects, viz.:—an extensive live-cattle market, a new dead-meat market, and commodious and well-ventilated slaughter-houses contiguous to both; part of the plan also consisting of a new line of street from Long-lane to Holborn,

The Deputation have not been enabled at present to prepare full statements of all the circumstances connected with the markets; this, however, they can do hereafter; premising, nevertheless, that all communications from them must be expressly without prejudice to the Corporation, and upon the understanding that their suggestions will require the sanction of the Common Council before the Corporation can be considered as pledged to them.

Subject to these considerations, the Deputation have directed the plan before mentioned to be prepared, for the enlargement and improvement of Smithfield market, which the architect will produce and explain to the Commissioners.

The site will be upon an inclined plane, sloping towards the deep drainage, which is only removed a short distance from it, and to which there is an abundant fall, calculated to take off the water which will be supplied at the summit for washing the market and drains, and also for the use of the cattle if required.

Well-ventilated lairs are also provided for the unsold cattle.

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APPENDIX.

The space for the live-cattle market will be eight acres and one quarter, and will provide for 5,000 bullocks, *all to be tied*, and 1,800 pens for sheep, calculated to hold 20 each, *i. e.* 36,000 in the whole, and separate provision for calves and pigs.

The cost of this improvement and extension, it is computed, can be repaid by additional tolls, which would be assented to by the trade, and would only be a charge upon the market till the cost is liquidated.

Regulations would also be made for the early clearing of the market, so as to prevent the interruption of the traffic in the streets, and any annoyance to passengers by the cattle during the crowded part of the day.

The site of the dead-meat market is proposed to be three and three-quarters of an acre, which will afford ample accommodation for the present demand, and for any future increase; the cost of the site and erections would be defrayed by annual rents and charges.

We also exhibited the plan and model which had been prepared in accordance with the directions of your Committee. The architect was in attendance and gave a full explanation of its details.

The Commissioners expressing a wish that a statement in writing should be laid before them, applicable as well to Smithfield as to Newgate, and including the whole subject as to the live and dead-meat markets, we have prepared the following Report for that purpose, which we submit to the consideration of your Committee:—

Smithfield.

Smithfield has been a market-place almost as far back as the history of London reaches, and the market is held there by the Corporation by prescription, confirmed by charters and by Acts of Parliament.

In 1327 King Edward III., in the first year of his reign, granted by his charter, amongst other things, that “no market should thenceforth be granted by the King or his heirs to any within seven miles in circuit of the City of London.”

The market, with the tolls, is also confirmed to the City of London, by the charter of the 14th of Charles I. (1638), which was further confirmed by the *Inspeximus* Charter of Charles II.

The City's rights and liberties having been seized under a writ of *quo warranto* in the reign of King Charles II., the Act of the 2nd William and Mary, chap. 8, was passed, by which the judgment against the City was declared to be illegal and arbitrary; and the rights, markets, and liberties of the City were, amongst other things, restored to them peaceably to have and enjoy.*

The Islington Market Act (5 and 6 William IV., chap. 111), recites the City's title to Smithfield market, and the prohibition against erecting any new market within seven miles of it (in support of which the opinions of the Judges were given in the House of Lords), and grants compensation to the City for any loss they might sustain by the diminution of the tolls and profits of Smithfield consequent on the establishment of the new market at Islington.

In the year 1833, the area of this market-place, was	4	2	35	
„ „ 1834,	0	1	10	were added to it.
„ „ 1836,	0	0	13	„ „
„ „ 1837,	0	2	0	„ „
„ „ 1839,	0	0	8	„ „
„ „ 1847,	0	1	13	„ „
„ „ 1849,	0	0	16	„ „
Making the area at this present time . . .	6	0	15	

These additions cost the Corporation not less than 43,000*l.*, for the repayment of which no provision was made.

The cattle at present stand in the southern portion of this area.

The sheep in the eastern, western, and centre parts.

The calves and pigs in the west and north.

There are in the present area 1,506 pens which are capable of holding—

Sheep	30,000
Calves	500
Pigs	1,000

and the standing for cattle will receive 2,750 tied; and about 1,250 untied in ring-droves.

After much inquiry and evidence, it appears that a larger area is required for the accommodation of cattle and sheep, &c., which are brought to this market place, and that provision should be made for the reception of—

Cattle (tied)	5,000
Sheep	36,000
Calves	500
Pigs	1,000

To make effectual provision for the reception of these numbers, an additional area of more than two acres is found to be necessary, making the market place eight acres and a quarter, no portion of that space being occupied by roads or paths, which form a material deduction

* See evidence of Mr. Serjeant Merewether, Town Clerk, Rep. H. C. 1847, folio 329. Do. of W. L. Newman, Esq., City Solicitor, Rep. H. C. 1828, folio 189 to 192, and of Timothy Tyrrell, Esq., Remembrancer, *ibid.*

from the available area of the present market place ; thus the practical increase in the size of the market will be above one-half.

Considering the market in Smithfield as having gradually increased in the number of sellers and buyers for many years past, and that the convenience and advantage of both have been from time to time consulted, while the trade, buyers and sellers are generally desirous of continuing the market-place in this locality, the decided conclusion is adopted, that the market should be continued in or near Smithfield ; first, on account of the dislocation and disarrangement of the trade of the market and the neighbourhood for a considerable distance surrounding it, as well as of the general trade of the City of London—together with the inconvenience and cost which would also arise to the public if the market should be removed. The following reasons likewise concur for the continuance of the market in Smithfield :—

Its elevated position, and its consequent healthfulness and fitness for draining, being 30 feet above the deep sewer and 45 above low-water mark.

Its central position for all the details of general business.

Its contiguity to the dead-meat markets in Newgate-street and Leadenhall-street.

The convenience of access for all the different kinds of cattle to Smithfield by large public thoroughfares (as will be shown in detail below) from both sides of the river, and from the docks, wharves, and surrounding termini of the different metropolitan railways, and also the radiating streets in all directions for the cattle driven from the market to the different parts of the town to which they are to be conveyed.

The numerous lairs in the vicinity of the metropolis for cattle intended for sale in Smithfield market, from which they are brought at a late hour in the night, or an early hour in the morning, without annoyance to the inhabitants.

The establishment of a perfect system of salesmen and bankers, by which graziers and farmers are enabled to receive the money for their cattle on the evening of the same day on which they are sold, and the contiguity to Lombard-street, the Bank, and the Post-office.

The complete sewerage of the market, the small toll paid, and the control and management of the market, administrative, magisterial, and sanitary, being in the Corporation of London, whose sole object is the public advantage.

It may also be observed that, by long attention to the inconveniences which heretofore arose in the neighbourhood of Smithfield, many of those inconveniences have been lessened, if not altogether obviated ; and should a removal to another locality be attempted, it by no means follows that some of these inconveniences may not be renewed, and perhaps aggravated, together with new inconveniences which cannot be foreseen, it being impossible to provide animal food for 2,000,000 of people without some practical inconveniences.

Access.

The cattle and sheep come to Smithfield market from north, east, south, and west, collecting together in different lairs surrounding the City of London, convenient for the cattle coming from each of those quarters :—

1. Those from the north and north-west come chiefly to Chalk Farm and Islington, where they are deposited in lairs at Perkin's market, Flight's (late Laycock's) lairs, the Goose lairs, and others in the neighbourhood of Pentonville.

Some foreign cattle arriving between the market days are driven to the Goose lairs at the top of St. John's-road.

2. Those from the north-east and east, Norfolk, Suffolk, and Cambridgeshire, at lairs at Stratford and Mile-end.

3. Some of the cattle from Ireland, Scotland, Germany, Holland, and other foreign ports, go to private lairs in Hackney.

Others to Skinner's lairs in Kennington-lane.

4. The cattle and sheep from the south-east, south, and south-west, come to Skinner's lairs, in Kennington-lane, and to the Half-way House, Kent-road.

5. Cattle from the west come mostly by the Great Western Railway ; and many are collected at Southall and Paddington.

No. 1. The cattle at the lairs No. 1, are driven from thence to Smithfield, through Goswell-street and St. John-street, principally by the latter ; and some by Duke-street.

No. 2. By Shoreditch, Worship-street, Barbican, and Long-lane.

No. 3. Those from Hackney come in the same direction as those from No. 2.

Those from Kennington-lane by Blackfriars Bridge, Farringdon-street, and King-street, Hosier-street, or Cock-lane, to Smithfield.

No. 4. The same as the last-mentioned route, from Kennington-lane.

No. 5. Those coming from the railway at Paddington, by the New-road to Islington, and thence by St. John-street.

Egress.

The egress from Smithfield market for the largest number of cattle is down Hosier-street, Cock-lane, or King-street, to Holborn-bridge, and by Farringdon-street to Blackfriars-bridge.

Note.—The present rules, orders, and ordinances for drovers, &c., and the duties of the collector of Newgate, and the collector and clerk of Leadenhall market, are contained in Appendices A. B. C. and D. ; they will require revision and addition.

The statutes relating to Smithfield, Newgate, and Leadenhall markets are in Appendix E.

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Another large quantity to the west by the same route to Holborn-bridge and up Holborn-hill; some by West-street.

Another large quantity go by Long-lane to Whitechapel; and some by Duke-street and Little Britain.

The unsold cattle return from Smithfield by St. John's-street and Goswell-street; others to the layers from which they came.

From these facts it will be seen that the cattle going *to* and *from* Smithfield do not pass through the principal thoroughfares of the metropolis.

The principal disadvantages attributed to Smithfield and Newgate market-places in their present state, are want of space; and with respect to Smithfield, the impediment to the present traffic through the market, and the driving of cattle from the market through the streets: as to Newgate, the crowding of one of the principal avenues with carts, and the confined state of the approaches.

With respect to want of space, the plan proposed will effectually obviate this defect, both in the live and dead-meat market.

With regard to the inconvenience sustained by driving cattle through the streets from the market, it will be obviated by closing the gates of the market an early hour, and by regulations to promote the early departure of the cattle, and to prevent their quitting the market after 10 o'clock in the morning until the evening, as well as by providing well-regulated and well-ventilated slaughter-houses contiguous to the live and dead-meat market, and so placed as to be subject to easy regulation and supervision.

Estimating, therefore, the advantages of an elevated site, well suited for drainage, central in its position, and inseparably connected with the trade of the neighbourhood, and of the City of London generally, your Committee arrived at the conclusion that the best locality for the market would be in the vicinity of the present market-place.

They therefore directed plans to be prepared with these views, and having considered many of them, they found that objections existed to the present irregular shape of the area of the market, and the separated position of the pens and ties, by which the buyers are compelled to waste their time in traversing the market from one part to another, creating confusion, and unnecessarily prolonging the business of the market, and therefore considered it advisable to have a more uniform and systematized arrangement.

They also found that the thoroughfares crossing the market, and the public paths surrounding it, caused a mutual interruption to the transactions of the market and the public traffic, and also prevented the available use for market purposes of a considerable portion of the area.

They therefore felt themselves obliged to pass by the plans first suggested for partial enlargements, and to recommend one proposed by the architect for an enclosed market entirely removed from the public streets, a line of road so surrounding the market-place as to connect all the principal thoroughfares, but allowing no traffic whatever through it. It also contains fit sites for a dead-meat market and slaughter-houses.

This plan, together with a model of it, has been laid before the Commissioners, and is calculated to obviate the inconveniences before detailed.

Its striking advantages are, that it will be separated from all the thoroughfares, while abundant provision will be made for the standing of carts, without encumbering the streets; that the whole area will be applied to the market alone; that it will be capable of being altogether closed; that being on an inclined plane, it will be suited for speedy cleansing and flushing, with a proper fall to the deep drains; that the whole market will be visible at one point of view, an advantage thought by the trade to be considerable; that proper compartments will be allotted for the pens of the sheep, and ties for the cattle, the whole of which last are in future to be tied; layers will be provided for a considerable quantity of cattle and sheep, should they be unsold, and ample contiguous sites are laid out for a dead-meat market and slaughter-houses, which are placed in such a situation that they can be easily increased to any necessary extent, without the displacement of any valuable property.

The arrangements of these sites will leave disengaged a portion of the present market, which may be applied for the purposes of the hay-market (the horse-market, if continued, may be removed to the enclosed market), and for baths and wash-houses, if required, as well as lodging-houses for the poor population removed by the new market-places.

Provision will also be made for a supply of water at the summit for flushing the market, and for the use of the cattle, if required.

The estimated amount of the whole cost of the live-cattle market is 245,000*l.*, proposed to be provided in such a manner as to repay the cost in 30 years, which will require the sum of 14,160*l.* per annum, to be produced by an additional toll of sixpence upon cattle, and of two-fifths of a penny upon sheep, and with which the Deputation have every reason to think the trade and the public will be satisfied, such additional toll to cease altogether at the expiration of the 30 years, or at such earlier period as the cost may be repaid. The details of the calculation will be found in Appendix F. It should be observed that the Corporation will probably during the 30 years contribute towards the improvement the greater part of the income they now receive,* in order to make up the annual sum above mentioned.

The estimated cost of the dead-meat market and the buildings will be 177,000*l.*: this, it is calculated, can be provided for by the rent of the houses and the charge for shops, stallage, tolls, &c.

* For an account of the revenue and expenditure of the Markets, ending 31st December, 1848, see Appendix G.

The cost of the slaughter-houses will be 45,000*l.*, which it is also calculated can be raised upon the rents.

The Committee do not advise any charge upon the public in respect of either of these two last improvements, but will recommend to the Corporation to take the responsibility of them upon themselves.

Another material feature of the plan is a new communication from Long-lane to Holborn, the additional cost of which will be 60,000*l.*; for this provision must be made by the aid of Government as a great public improvement, and for the benefit of the metropolis generally.

An apparently necessary consequence of the proposed plan will be the transfer of Newgate market to the more commodious dead-meat market to be erected, where the present holders in Newgate market would probably have a priority.

The Lord Mayor and Corporation have the power possessed by all Lords of markets of changing the market-place as the circumstances of the place and the exigencies of the public may require, as has been frequently done in the City of London.

With respect to Newgate market, the assent of the Dean and Chapter of St. Paul's will probably be requisite, and perhaps legislative interference. By the Statute 22nd Car. II. (1670), c. 11, s. 61—the London Rebuilding Act—it was provided that the Mayor and Citizens of London may have a market-place upon the ground set out by the consent of the Dean and Chapter of St. Paul's, for a market-place in Newgate, upon a lease from 40 years to 40 years for ever at the rent of four pounds per annum, and one year's rent by way of fine.

Slaughter-houses being at present scattered in different places, can neither be satisfactorily inspected nor restrained as nuisances; but when drawn to the new locality, where the owners of the present slaughter-houses would of course have a priority, they would be easily supervised and regulated.

H. LOWMAN TAYLOR.

T. H. HALL.

THOMAS DAKIN.

RD. HICKS.

JAMES LOW.

APPENDIX A.—AN ABSTRACT of all the RULES, ORDERS, and ORDINANCES now in force for governing and regulating persons driving cattle, sheep, calves, and lambs within the cities of London and Westminster, and liberties thereof, and the bills of mortality, with the penalties for the breach thereof, made by the Court of Mayor and Aldermen of the City of London, in pursuance and under the authority of an Act of Parliament made and passed in the 21st year of the reign of His late Majesty King George the Third.

WILSON, Mayor. 24th September, 1839.

That all tickets heretofore used by any person licensed to drive cattle, sheep, calves, or lambs within the aforesaid limits be discontinued, and fresh tickets substituted in lieu thereof, as hereinafter mentioned.

That, instead of the said tickets so directed to be disused, fresh tickets, made of iron or other metal, be forthwith provided by the Clerk of Smithfield market, or such other person as shall be appointed by the Court of Aldermen, to be delivered to such persons as shall be licensed to drive cattle, sheep, calves, or lambs within the aforesaid limits.

That upon each of the said new tickets shall be placed, in raised brass figures or otherwise, the armorial bearings of the City of London, and a number corresponding with the number which shall be inserted in the licence.

That no person not being the real owner or purchaser of any cattle, sheep, calves, or lambs, shall drive, or assist, or be employed in driving, any such cattle, sheep, calves, or lambs within the aforesaid limits, unless such person shall have a licence so to do, and a numbered ticket, granted to him under the authority of these Ordinances.

That the Clerk of Smithfield market, or such other person as aforesaid, shall, at such place as the Court shall direct, grant and issue licences and tickets under the provisions of these Ordinances, to all persons who shall drive, or assist, or be employed in driving, cattle, sheep, calves, or lambs within the aforesaid limits.

That the Clerk of Smithfield market, or such other person as aforesaid, shall, upon payment of five shillings, grant to any person not under sixteen years of age, who shall produce a satisfactory certificate of his good character and ability to act as a drover, a licence to drive cattle, sheep, calves, or lambs within the aforesaid limits; and in every such licence shall be specified the number thereof, with the name, place of abode, and age, together with a description of the person to whom the same shall be granted; and every licence shall bear date the day it is granted, and continue in force until the 1st of July next after the date, except it shall be sooner revoked, and except during the time it shall be suspended.

That the Clerk of the said market, or such other person as aforesaid, be authorized, during one calendar month preceding the 1st of July in any year, to issue licences to take effect from the date thereof, and to continue in force (except as aforesaid) until the 1st of July in the following year.

That the particulars of every licence shall be registered in a book which any person shall be at liberty to inspect without payment of any fee.

That before any licence shall be granted, a requisition for the same, in such form as the Court shall direct, accompanied by the before-mentioned certificate, shall be signed by the person requiring such licence: and in every requisition shall be truly specified the proper name, and surname, and place of abode, and age of the person applying for a licence.

That whenever any licensed person shall change his place of abode, he shall, within three days, give notice thereof in writing, signed by him, to the Clerk of the market, or such other person as aforesaid, specifying his new place of abode, and shall produce his licence to the Clerk of the market,

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or such other person as aforesaid, who shall endorse thereon and register in the said book the particulars of such change; and if any licensed person shall change his place of abode and omit to give notice thereof as aforesaid, every person so offending shall for every offence forfeit any sum not exceeding 40s. nor less than 10s.

That the Clerk of the market, or such other person as aforesaid, shall, at the time of granting every licence, deliver to the person to whom the same shall be granted, a ticket made of iron or other metal, and marked as before mentioned, and also an abstract of all such rules, orders, and ordinances made by the Court as shall be in force at the time of granting such licence, and of the penalties annexed to the breach of such rules, orders, and ordinances.

That every person duly licensed as aforesaid shall, at all times during his employment, wear the ticket which shall have been delivered to him, conspicuously, upon the upper and outer part of the left arm, in such manner that the number thereon shall at all times be distinctly visible and legible. And if any person licensed as aforesaid shall not at all times during his employment wear the ticket delivered to him as before directed, or shall refuse to produce the same for inspection when required, or shall refuse to permit any person to note the number on such ticket, every person so offending shall for every offence forfeit any sum not exceeding 40s. nor less than 10s.

That upon the expiration of any licence, the person to whom the same shall have been granted shall deliver up such licence and the ticket relating thereto to the Clerk of the Market, or such other person as aforesaid; and if, after the expiration of such licence, the person to whom the same shall have been granted shall use or wear the ticket relating thereto, or shall not, within the space of three days, deliver up the ticket, every person so offending shall for every offence forfeit any sum not exceeding 40s. nor less than 10s.

That if any person shall, within the aforesaid limits, drive, or assist, or be employed in driving any cattle, sheep, calves, or lambs (not being the owner or purchaser thereof) without a licence and ticket as before mentioned, or if any person to whom any licence or ticket shall have been granted shall transfer or lend such licence, or permit or suffer any other person to use or wear such ticket, every person so offending shall for every offence forfeit any sum not exceeding 40s. nor less than 10s.

That whenever the number on any ticket shall become obliterated or defaced, so that the same shall not be distinctly visible and legible, such ticket shall be delivered up to the Clerk of the Market, or such other person as aforesaid, who is authorized, upon payment of 2s. 6d., to issue another ticket of a corresponding number: and if any person shall wear or use any ticket after it shall have become obliterated or defaced, so that the number shall not be distinctly visible and legible, every person so offending shall for every offence forfeit any sum not exceeding 40s. nor less than 10s.

That every person to whom any licence shall be granted as before mentioned shall, in all cases where he shall be summoned to attend before any Justice of the Peace, produce the licence granted to him; and, if such person shall be adjudged guilty of the offence alleged against him, it shall be lawful for the Justice to endorse upon the licence of such person the nature of the offence and the amount of the penalty inflicted; and if any person shall neglect or refuse to produce his licence as aforesaid, he shall for every offence forfeit any sum not exceeding 40s. nor less than 10s.

No person licensed as before mentioned shall, after the hour of nine in the forenoon, drive, or permit or suffer to be driven, within the aforesaid limits, more than twenty cattle in one drove, or more than one hundred sheep or lambs in one drove, under a penalty not exceeding 40s. nor less than 10s.

No drove of cattle exceeding the number of ten shall be driven within the said limits, unless some licensed drover, registered and ticketed as aforesaid, shall precede such drove, under the penalty of 20s.

No person engaged in driving cattle, sheep, calves, or lambs within the aforesaid limits shall use any stick or other instrument with a goad or point of greater length than a quarter of an inch, under a penalty not exceeding 40s. nor less than 10s.

All sticks or other instruments used by persons engaged in driving cattle, sheep, calves, or lambs within the aforesaid limits shall be stamped with such distinguishing mark as the Clerk of the Market, or such other person as aforesaid, shall deem expedient; and if any person shall use any stick or instrument which shall not have been so marked, every person so offending shall for every offence forfeit any sum not exceeding 40s. nor less than 10s.

No licensed drover or any other person or persons to beat or strike any cattle, sheep, calves, or lambs on or below the neck, or otherwise beat, bruise, or ill-treat such cattle, sheep, calves, or lambs in the driving, or during such time as he or they have the care thereof, under a penalty of 20s.

No person engaged in driving cattle within the aforesaid limits shall, during such employment, use, or permit or suffer to be used, any dog, under a penalty not exceeding 40s. nor less than 10s.

No drove of sheep or lambs exceeding forty shall be driven within the aforesaid limits unless attended by two drovers at least; and if any person shall drive, or permit or suffer to be driven, within the aforesaid limits, more than forty sheep or lambs in any one drove, without being accompanied by some other licensed person to assist in attending such drove, every person so offending shall for every offence forfeit any sum not exceeding 40s. nor less than 10s.

No person engaged in driving sheep or lambs within the aforesaid limits shall use more than one dog to any one drove, under a penalty not exceeding 40s. nor less than 10s.

That in all streets, roads, and places within the aforesaid limits, where the carriage-way shall be of sufficient width to allow three carriages to pass abreast, all cattle, sheep, calves, and lambs shall be driven on the left or near side of the carriage way; and if any person engaged in driving cattle, sheep, calves, or lambs in any such street, road, or place within the aforesaid limits, shall drive, or permit or suffer to be driven, such cattle, sheep, calves, or lambs upon any part of such street, road, or place except the left or near side of the carriage way, or shall suffer any of such cattle, sheep, calves, or lambs to spread over such street, road, or place, or otherwise obstruct the thoroughfare thereof, every person so offending shall for every offence forfeit any sum not exceeding 40s. nor less than 10s.

No cattle, sheep, calves, or lambs shall be driven into Smithfield market on any Sunday before the hour of twelve at night, under a penalty not exceeding 40s. nor less than 10s.

No person shall drive, or permit or suffer to be driven, any cattle, sheep, calves, or lambs into any street, road, or place within the distance of one mile from Smithfield market, on any Sunday, before the hour of eleven at night, under a penalty not exceeding 40s. nor less than 10s.

If any person shall knowingly drive, or suffer to be driven, within the aforesaid limits, any wild or infuriated cattle, he shall for every offence forfeit any sum not exceeding 40s. nor less than 10s.

All cattle sold in the said market, and known to be wild, or become so by over-driving or otherwise, to be secured and taken to the next public slaughter-house and there killed, upon pain of the owner, or the person intrusted with the sale or with the driving thereof, forfeiting 20s.

The owner of any cattle, or the person intrusted with the sale thereof, selling the same in the said market, knowing such cattle to be wild, and not informing the purchaser thereof, to forfeit and pay 40s.

In case the master or employer of any licensed drover of cattle who shall be guilty of any offence against the said Act of the 21st Geo. III., or against the rules, orders, and ordinances, shall not, upon notice given him thereof, or left at the usual place of abode of such master or employer of such drover, deliver up, to be brought before a magistrate, such drover, then and in such case such master or employer shall be liable to answer and shall pay the penalty incurred by any such drover; and if the drover shall afterwards be found, and shall not make satisfaction forthwith to his master or employer, or masters or employers, for what he or they shall have paid for any such drover's misbehaviour, neglect, or default, every such drover shall forfeit and pay 20s. for every such default.

Gibbs, Mayor. 6th May, 1845.

That every person duly licensed by virtue of the rules, orders, and ordinances made the 2nd day of July, One thousand eight hundred and thirty-nine, shall at all times during his employment wear the ticket which shall have been delivered to him conspicuously, upon the upper and outer part of the left arm, in such manner that the number thereon shall at all times be distinctly visible and legible; and if any person, licensed as aforesaid, shall not at all times during his employment wear the ticket delivered to him as before directed, or shall refuse to produce the same for inspection when required, or shall refuse to permit any person to note the number on such ticket, every person so offending shall for every offence forfeit any sum not exceeding 40s. nor less than 10s.

Provided always, that such person being employed on his own account, as master, to drive any such cattle, sheep, calves, or lambs, and being also a freeman of the said city, shall be at liberty to drive, or assist or be employed in driving, any such cattle, sheep, calves, or lambs within the limits of the said Smithfield market, upon his obtaining a licence from the said Clerk of Smithfield market so to do, and also an ivory ticket with his name and residence inscribed thereon.

That if any such person being employed on his own account, as master, to drive any such cattle, sheep, calves, or lambs, and being also a freeman of the said city, shall, upon the request of any other person or persons, refuse or neglect to produce to him or them his said licence from the said clerk of Smithfield market, and the said ivory ticket so delivered to him as aforesaid, or either of them, every person so offending shall for every such offence forfeit any sum not exceeding 40s. nor less than 10s.

That all and every the rules, orders, and ordinances made by the Court of Mayor and Aldermen, on the 25th day of September, 1792, and on the 29th day of November, 1831, and also on the 2nd day of July, 1839, for the governing and regulating all persons who shall drive any cattle, sheep, calves, or lambs within the cities of London and Westminster and liberties thereof, and the Bills of Mortality, except as they are hereby altered and amended, shall remain in full force and effect.

MEBREWETHER.

AN ABSTRACT of the RULES, ORDERS, and REGULATIONS for the better Regulation and Government of SMITHFIELD MARKET.

That every salesman, grazier, or other person who shall require accommodation in Smithfield market shall, the evening previous to each market day, give to the collector of the market notice in writing of the number of cattle, sheep, lambs, calves, or pigs for which such salesman, grazier, or other person shall require accommodation, and the extent of rail or the number of pens he may be desirous of having appropriated to his use.

That all calves or pigs exposed or offered for sale in the market shall be tied up or penned in that part of the market only which is set apart for that purpose.

That all cattle, sheep, lambs, calves, or pigs which shall be tied up, penned, or otherwise placed in the market contrary to the directions of the collector, shall be forthwith removed.

That no cattle, sheep, lambs, calves, or pigs shall stand upon or be driven along any of the flag footways in any part of the market, except so far only as may be absolutely necessary in driving the same direct to or from any pen or pens appropriated for the sale thereof opening into or upon any such footway.

That no cattle, sheep, lambs, calves, or pigs shall be driven into, through, or along any avenue or space within the market appropriated for the sale of cattle, except such cattle shall be driven into such avenue or space by direction of the collector, for the purpose of sale, or shall be driven therefrom after having been purchased.

That no cattle shall stand or be offered or exposed for sale in any off-drove or ring-drove in that part of the market extending from King-street to Long lane, thence to Duke-street round to Giltspur-street, but that the space within such limits shall be kept as a clear and open way for all cattle, sheep, lambs, calves, and pigs to be driven into and out of the market.

That no drover or other person shall detain any sheep or lambs in any of the alleys or avenues between the sheep pens within the market after such sheep or lambs shall have been sold, but all sheep and lambs when sold and delivered to the charge of any drover shall be immediately driven out of the market.

That all horses, mares, geldings, mules, and asses, which shall be offered or exposed for sale in the market, shall be placed in the centre avenues thereof, and that no horse, mare, gelding, mule, or ass shall be tied to or exposed, or offered for sale in any other part of the market; and the tolls and dues payable in respect of such horses, mares, geldings, mules, and asses shall be paid to the collector prior to any of such horses, mares, geldings, mules, or asses being admitted into the said avenues; and, for the better protection of the public from dangerous obstructions and accidents, it is ordered, that temporary barriers be placed across the ends of the said avenues.

That no cart or carriage of any kind, nor any part or portion of any cart or carriage, nor any old harness, old iron, or any other article or thing of a like description shall be laid down, hung up, or otherwise exposed for sale in any part of the market.

WOOTHORPE.

APPENDIX.

APPENDIX B.—DUTIES of the COLLECTOR of NEWGATE MARKET.

To attend in the market daily (Sundays excepted), from 5 o'clock in the morning 'till 2 o'clock in the afternoon; but, in addition on Saturdays, from 5 o'clock in the afternoon 'till 11 o'clock at night.

To demand, receive and collect the several tolls and duties due and payable for meat, poultry and other provisions, the property of non-freemen, brought into the said market for sale; and on every Saturday to collect and receive the several weekly rents payable for shops, stalls and standings.

To make out and deliver, on Tuesday in every week, to the Comptroller of the Chamber, a clear and distinct account in writing of all and every sums and sum of money received and collected up to, and including the Saturday next preceding, distinguishing therein the weekly rents of shops, stalls, and standings from the tolls and duties, and annex to every such account a list of the arrears then due to the City; and to pay into the Chamber, on or before Thursday in every week, the amount of the collection, deducting therefrom the weekly payments authorized by the Markets Committee.

To prevent the projection of all stall-boards, hampers, baskets and other encroachments, and remove all obstructions from the passages into and across the market.

To use all the means in his power to prevent quarrels, and, with the assistance of the constables of the market, to quell all disorders therein, and cause offenders to be taken before a magistrate.

To seize all unwholesome meat, poultry, and other provisions under the deputation from the Lord Mayor, to be obtained yearly for the purpose; and afterwards to destroy such meat, poultry, and other provisions according to law.

To give notice from time to time to the Commissioners of Sewers of any want of cleansing of the said market, and to attend the said Commissioners upon the complaint being heard.

To verify his accounts by declaration before the Lord Mayor, or one of the aldermen of this City once in every year, or oftener if required.

To give information to the Markets Committee of all shops, stalls, and rails, from time to time, which shall become vacant, in order to the reletting thereof; and to affix notice-boards upon the said shops, stalls, and rails for reletting the same, and to attend the said Committee, from time to time, upon the reletting thereof, and upon all other occasions when required.

To enforce the general orders made or to be made for the due regulation of the market, and generally to do, perform and execute, whatever shall be necessary or be directed by the Markets Committee in relation thereto, and the due and punctual collection of the rents and tolls therein, and the management thereof.

APPENDIX C.—DUTIES of COLLECTOR of the POULTRY MARKET, LEADENHALL.

To attend daily (Sundays excepted) in the poultry market during the market hours, and demand, receive and collect, for the use of the Corporation, the several tolls and duties due and payable for poultry, &c., the property of non-freemen, brought into and exposed for sale in the said market; and on every Saturday to collect and receive for the use of the Corporation, the several weekly rents payable for shops, stalls, and standings.

To make out and deliver, on Tuesday in every week, to the Comptroller of the Chamber of this City, a clear and distinct account, in writing, of all and every sum and sums of money received and collected, up to and including the Saturday next preceding, distinguishing therein the weekly rents of shops, stalls, and standings from the tolls and duties, and annex to every such account a list of the arrears then due to the City, and pay into the Chamber on or before Thursday in every week the amount of the collection.

To prevent the projection of all stall-boards, hampers, baskets and other encroachments, and remove all obstructions from the passages in and across the market.

To use all the means in his power to prevent quarrels, and, with the assistance of the constable of the market, to quell all disorders therein, and cause offenders to be taken before a magistrate.

To seize all unwholesome poultry, &c., under the deputation from the Lord Mayor, to be yearly obtained for the purpose, and afterwards to destroy the same according to law.

To give notice from time to time to the Commissioners of Sewers of any want of cleansing the said market, and to attend the said Commissioners upon the complaint being heard.

To verify his accounts upon oath before the Lord Mayor, or one of the aldermen of this City, once in every year, or oftener if required.

To give information to the Markets Committee of all shops or stalls, from time to time, which shall become vacant, in order to the reletting of the same, and to attend the Committee from time to time, upon the reletting thereof, and upon all other occasions when required, and generally to do, perform, and execute whatever shall be necessary, and directed by the said Committee in relation to the said market, and the due and regular collection of the said tolls and the management thereof.

APPENDIX D.—DUTIES of the CLERK of the WHOLESALE MEAT-MARKET at LEADENHALL.

To attend daily (Sundays excepted) in the wholesale or beef-market during the market hours, and demand, receive, and collect for the use of the City the several tolls and duties due and payable for beef, veal, pork, mutton, and lamb, the property of non-freemen brought into and exposed for sale in the said market, and on every Saturday to collect and receive for the use of the City the several weekly rents payable for hanging rails in the said wholesale market, and for shops, stalls, and standings in the retail meat-market; and on Tuesday in every week, to make out and deliver to the Comptroller of the Chamber of this City a clear and distinct account in writing of all and every sum and sums of money received and collected up to and including the Saturday next preceding, distinguishing therein the weekly rents of shops, stalls, standings, and hanging-rails, from the tolls and duties, and annex to every such account a list of the arrears then due to the City, and to pay into the Chamber on or before Thursday in every week the amount of the collection, deducting therefrom the amount of the constable's salary only.

To take care of the beam, weights, and scales, and other fixtures and materials belonging to the City within the said market.

To prevent the projection of all stall-boards, and other encroachments, and remove all obstructions from the passages into and across the market, and use all the means in his power to prevent quarrels, and, with the assistance of the constable of the market, to quell all disorders therein, and to take the offenders before a magistrate, to seize all unwholesome meat, &c., under the deputation from the Lord

Mayor, to be obtained yearly for the purpose, and afterwards to destroy such meat, &c., according to law.

Once in every year, or oftener if required, to verify his account upon oath before the Lord Mayor, or one of the aldermen of this City, and to give information to the Markets Committee of all shops, stalls, or hanging-rails from time to time which become unoccupied, in order to the reletting the same, and to attend the said Committee from time to time upon the reletting thereof, and upon all other occasions when required, and generally to do, perform, and execute whatever shall be necessary and directed by the said Committee in relation to the said market, and the due and regular collection of the said tolls and duties and the management thereof.

APPENDIX.

APPENDIX E.—ACTS OF PARLIAMENT relative to SMITHFIELD MARKET.

2 and 3 Phil. and Mary, cap. 7, sec. 1	Regulations for the sale of horses in fairs and markets.
Sec. 2	As to ownership of stolen horses.
Sec. 4	Fee where no toll is payable.
31 Eliz. cap. 12, sec. 1. . . .	Further regulations for the sale of horses in fairs and markets.
Sec. 3	Owner may redeem a stolen horse.
22 and 23 Chas. II., cap. 19, expired	To prevent frauds in the buying and selling of cattle in Smithfield and elsewhere.
2 Wm. and Mary, Sess. 2, cap. 28, sec. 16	Weight of a ton of hay.
31 Geo. II., cap. 40, repealed 36 Geo. III., cap. 88, sec. 1	„ „ hay and straw.
31 Geo. II., cap. 40, 97, if not repealed by 12 Geo. III., cap. 71	Salesmen, &c., employed to buy and sell cattle for others are not to buy or sell on their own account.
21 Geo. III., cap. 67, sec. 5	Court of Aldermen not to abridge the time for keeping open Smithfield market (12 at night till 3 in the afternoon), but may enlarge the time.
36 Geo. III., cap. 88	An Act to regulate the buying and selling of hay and straw.
Sec. 2	No hay or straw to be sold in any market or place in London or Westminster except in trusses.
Sec. 3	Weight of trusses.
Sec 10	Register to be kept in markets for entering sales of hay and straw in London to be kept by the Registrar appointed by the Court of Common Council.
Sec. 13	Scales and weights to be kept at the Clerk of the Markets Office, and at watch-houses.
Sec. 15	Market hours.

II.

Newgate Market.

22 Chas. II., cap. 11, sec. 61	Market-place within Newgate to be granted to the City by lease or otherwise.
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III.

Leadenhall Market.

14 Chas. II., cap. 11, sec. 63, repealed 48 Geo. III., cap. 60, sec. 2	Red-tanned leather to be bought in fairs or markets only.
14 Chas. II., cap. 7, sec. 8 . .	Leadenhall market to be kept on Tuesday.
8 and 9 Wm. III., cap. 21, sec. 11, 13	Leather not to be sold otherwise than in open market or fair.
48 Geo. III., cap. 71, sec. 22	All hides and calf-skins flayed within five miles of the Royal Exchange, to be brought to Leadenhall market for inspection.
11 Geo. IV., and 1 Wm. IV., cap. 15.	Duties and restrictions on the manufacture of leather repealed.

A copy of the rules and regulations as specified in the duties of the collectors of Newgate and Leadenhall markets accompany this Report.

Dated this 9th day of January, 1850.

HENRY ALWORTH MEREWETHER, *Town Clerk.*
THOMAS SAUNDERS, *Comptroller.*
E. TYRRELL, *Remembrancer.*
CHARLES PEARSON, *City Solicitor.*

APPENDIX

APPENDIX F.

A STATEMENT of the ESTIMATED PRODUCE of SMITHFIELD MARKET, made out upon the basis of the several suggestions agreed to by the Markets Improvement Committee, 7th February, 1850, showing how far such Produce would be sufficient to provide for the existing net profits of the Corporation arising from the Market, the payment of the expenses of collection and management, also Interest on 245,000*l.* to be expended in enlarging and improving the Market, and to effect the discharge of that principal sum in 30 years.

EXISTING TOLLS, &c.		ESTIMATED PRODUCE OF PROPOSED TOLLS AND CHARGES.			ESTIMATED CHARGES UPON PRODUCE.					
		£.	s.	d.		£.	s.	d.		
Tolls upon all Stock at Market, including existings tolls and ties, viz. :—										
1 <i>d.</i> toll, 1 <i>d.</i> tie each	Beasts, at 8 <i>d.</i> each		241	574	Expenses of management existing, viz. :—					
1 <i>½</i> of a penny each	Sheep and lambs, at ½ <i>d.</i> each		1,540	976	Rates, taxes, gas, repairs, salaries, and sundries	£2,500	0	0		
1 <i>½</i> of a penny each	Pigs, at 1 <i>d.</i> each		26,000		Estimated additional do. for enlarged area	1,500	0	0		
1 <i>d.</i> tie each	Calves, at 2 <i>d.</i> each		27,360							
2 <i>d.</i> tie, 4 <i>d.</i> entry each	Horses, at 4 <i>d.</i> each, 4 <i>d.</i> entry; 8 <i>d.</i> each		13,500			4,000	0	0		
6 <i>d.</i> toll, 1 <i>d.</i> do. each load	Hay, at 7 <i>d.</i> a load, including entry		23,400		Interest on 245,000 <i>l.</i> to be expended in enlargement, and sinking fund to discharge the same in 30 years, at 4 <i>l.</i> per cent.. . . .					
1 <i>d.</i> entry each load	Straw, at 2 <i>d.</i> a load, including entry		3,120			14,160	0	0		
1 <i>s.</i> each pen.	Sheep, calf, and pig pens, as at present, (say)		5,300							
Graduated regulation tolls on cattle, &c., leaving Market after 7 o'clock, a. m., viz. :—										
	Before 8, beasts, 2 <i>d.</i> each; sheep, 4 <i>d.</i> per score				Estimated balance towards payment of the existing Interest which the Corporation have in the Market					
	Before 9, beasts, 4 <i>d.</i> each; sheep, 8 <i>d.</i> per score		1,000	0		2,467	13	4		
	Before 10, beasts, 6 <i>d.</i> each; sheep, 1 <i>s.</i> per score									
	Pigs, calves, and horses, in proportion, estimated at		1,500	0						
	Produce of lairs under covered-way, estimated at		70	0						
	Drovers' licences, (say)		Nil.							
	Bartholomew Fair									
Total estimate gross produce for 30 years		£	20,627	13	4	Total estimated charges for 30 years	£	20,627	13	4

Chamber of London, February 13, 1850.

(Signed) BEN. SCOTT.

NOTE.—It was suggested that, inasmuch as the Corporation are not desirous of realizing any advantage beyond their existing interest in the Market, and as it is doubtful what will ultimately be the real produce of several of the charges above stated, it would be desirable that powers should be given to the Board of Trade, or some other branch of the Government, in conjunction with the Corporation, to lower the proposed Tolls, if found to be more productive than is anticipated; or to apply such increased profits in a more speedy discharge of the sum to be raised; or, on the other hand, to raise the Tolls, &c. (within prescribed limits), if found to be insufficient. At the end of 30 years, or earlier if the Loan is discharged, Tolls, &c., to fall back to the existing customary charges.

SMITHFIELD MARKET.

Chamber of London, Guildhall, December 22, 1849.

(Signed) BENJAMIN SCOTT, *Chief Clerk.*
Extracted from the Accounts of the Markets Committee.

NEWGATE MARKET:

Chamber of London, Guildhall, December 22, 1849.

(Signed) BENJAMIN SCOTT, Chief Clerk.

148 APPENDIX to REPORT of the SMITHFIELD MARKET COMMISSION.

APPENDIX.

3. Letters from the Clerk of Smithfield Market, 16th February, 1850.

3. LETTERS from the Clerk of Smithfield Market,—Sale of Calves, Pigs, and Horses,—and of Hay and Straw.

SIR,

Smithfield Market, 16th February 1850.

IN reply to the request of the Royal Commission on the subject of Smithfield Market, I consider that 141,480 should be deducted from the number of sheep returned by the Chamberlain as offered for sale in the year 1848, in Smithfield Market. The number of sheep sold from the 3rd of January to 29th December 1848, according to that calculation, will be 1,291,770.

The number of calves and pigs are not included in the Chamberlain's returns.

The number of calves sold was 28,856. It is an unusual occurrence for calves to be turned out of the market unsold.

The number of pigs offered for sale was 32,351. I estimate the number sold 27,350.

I am, &c.

*Mr. Saml. Redgrave,
Secretary of State's Office.*

*WILLIAM SHANK,
Clerk of Smithfield Market.*

SIR,

Smithfield Market, 23rd February 1850.

I HAVE the honour of furnishing, for the information of the Smithfield Market Commissioners, an account of the quantities of hay and straw sold in Smithfield Market in the year 1848; also of the number of horses exposed for sale. No account is kept of the number actually sold. There were 18,537 loads of hay, and 1,751 of straw, sold in the year 1848; and 12,867 horses exposed for sale.

I am, &c.

Your most obedient servant,

*Mr. Saml. Redgrave,
Home Office.*

*WILLIAM SHANK,
Clerk of Smithfield Market.*

4. Letter from Messrs. Chaplin & Horne, 25th March 1850.

4. LETTER from Messrs. CHAPLIN and HORNE,—Account of their Meat deliveries in London.

SIR,

Hambro' Wharf, 25th March 1850.

WE have taken the up meat traffic into the meat markets out for the past year, and it appears that we have had passed through our hands about 60 tons per week, or 10 tons per day average from the north; besides this we have had about 30 tons of butter also per week. But for last January and February we had 865 tons of meat, equal to 100 tons per week, having an increasing traffic from Scotland. This is exclusive of 30 tons per week, of butter.

We may also add that we have small quantities off the Eastern Counties and the South Western Railways, of meat.

We are, &c.

S. Redgrave, Esq. Secretary.

CHAPLIN and HORNE.

5. Letter from (the Clerk,) Mr. Daw, 16th March 1850.

5. LETTER from (the Clerk,) Mr. DAW, enclosing Resolutions of a Court of Assistants of the Butchers' Company.

SIR,

Butchers' Hall, Eastcheap, 16th March 1850.

I AM directed by the Master Wardens and Court of Assistants of the Worshipful Company of Butchers to transmit to you the enclosed Resolutions, which they have agreed to in consequence of their attention having been called by many members of the trade to the examination before the Royal Commission of evidence upon the question of the locality of Smithfield Market as a cattle market; and which I am directed to request you will be good enough to lay before that Commission at their next meeting.

I have, &c.,

Samuel Redgrave, Esq., Secretary.

JOSEPH DAW, Clerk.

At a COURT of ASSISTANTS of the COMPANY of BUTCHERS, held at the Hall, Friday, 16th March 1850.

RICHARD COOPER, Esq., Master, in the Chair.

It was moved, seconded, and resolved unanimously—

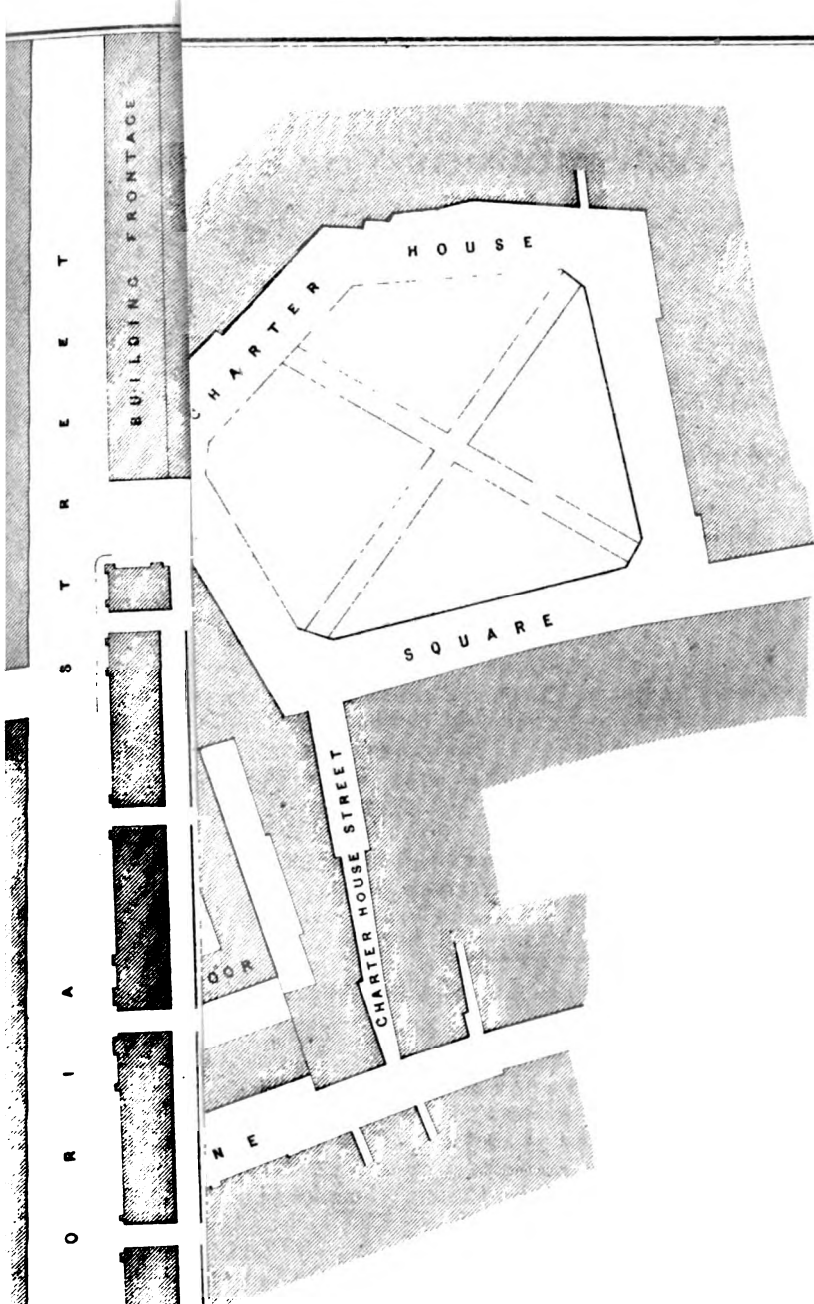
That this Court having attentively considered the subject of Smithfield Market as connected with its enlargement or removal, are satisfied that the best interests of all parties connected with the said market, whether as graziers, salesmen, or butchers, are and will be most essentially protected by retaining it in its present locality.

That this Court, from practical experience, are of opinion that the removal of Smithfield Market to any distance from its present site would occasion great inconvenience to all parties using and frequenting the same—would materially add to their expenses, and necessarily tend to increase public inconvenience and obstructions in the streets.

That it is highly satisfactory to this Court to be informed that the Corporation of London, representing the commercial body of this ancient city, are disposed to enlarge the present market to any extent which may be required, so as to retain within its limits this important branch of the trade of the metropolis.

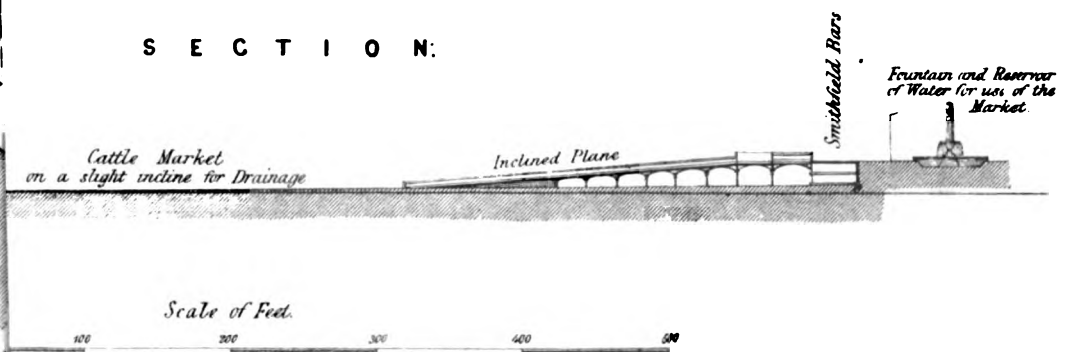
Signed by Order of the Court, and sealed with the Common Seal of the Company,

RICHARD COOPER, Master.



PROPOSED EXTENSION OF SMITHFIELD MARKET.

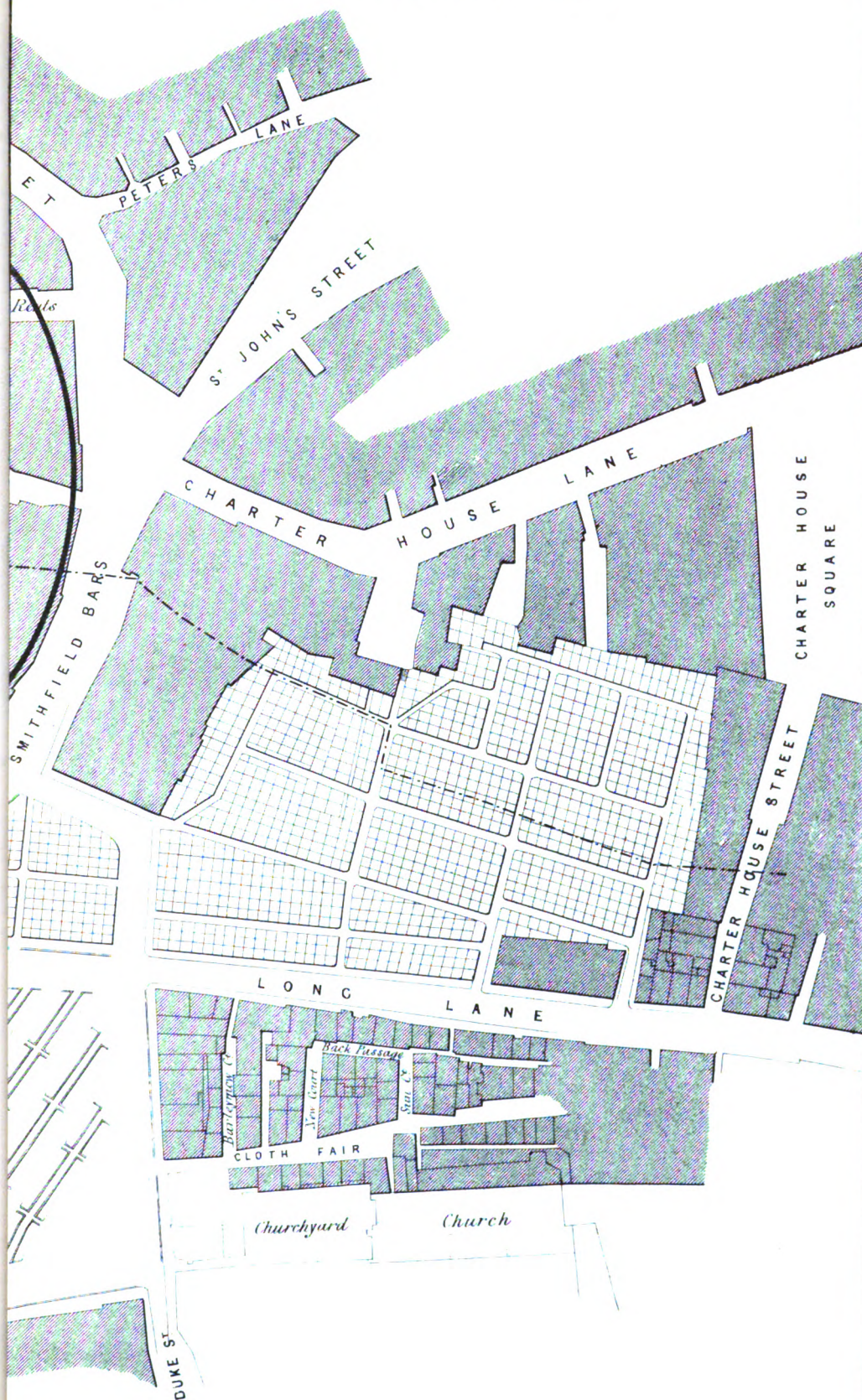
S E C T I O N :



J. B. BUNNING, ARCHT.
Office of Works
Whitehall

PLAN SHOWING THE SITE OF THE PROPOSED NEW SMITHFIELD MARKET, AND THE SURROUNDING PROPERTY.

The Alterations are shown by the strong black line.



Scale of Feet





